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The medical community is in the process of a paradigm shift in its management philosophy from one of traditional quality assurance, to the concepts of total quality management/continuous quality improvement (TQM/CQI). This change is being prompted by the Joint Commission on Accreditation of Healthcare Organizations' (JCAHO) initiative, an "Agenda for Change." TQM/CQI is an organizational philosophy which focuses on customer orientation, statistical assessment and continuous improvement of processes. Its implementation will require significant cultural change for most health care organizations. The military community will not be an exception.

This study researches the process of improving the delivery of OB-GYN services at the Frankfurt MEDDAC, using TQM/CQI tools and principles. The objective is to identify and reduce process variation and, thereby, improve internal and external customer satisfaction (i.e., improved real and perceived quality).

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**FRANKFURT MEDICAL DEPARTMENT ACTIVITY (FMEDDAC)**

**OB-GYN CLINIC STUDY**

A Graduate Management Project  
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Baylor University  
In Partial Fulfillment of the  
Requirements for the Degree  
of  
Master of Health Administration  
by  
Captain Charles V. Brookshire, Jr.

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**Abstract**

The medical community is in the process of a paradigm shift in its management philosophy from one of traditional quality assurance, to the concepts of total quality management/continuous quality improvement (TQM/CQI). This change is being prompted by the Joint Commission on Accreditation of Healthcare Organizations' (JCAHO) initiative, an "Agenda for Change." TQM/CQI is an organizational philosophy which focuses on customer orientation, statistical assessment and continuous improvement of processes. Its implementation will require significant cultural change for most health care organizations. The military community will not be an exception.

This study researches the process of improving the delivery of OB-GYN services at the Frankfurt MEDDAC, using TQM/CQI tools and principles. The objective is to identify and reduce process variation and thereby improve internal and external customer satisfaction (i.e., improved real and perceived quality).

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**FRANKFURT MEDICAL DEPARTMENT ACTIVITY (FMEDDAC)****OB-GYN CLINIC STUDY****Introduction**

The Frankfurt Medical Department Activity (FMEDDAC) supports the operation of a general hospital, 11 health clinics, a large dental activity and one veterinary detachment. Its mission includes professional, administrative, and logistical support to the 22 specialty services offered by the 97th General Hospital and 11 outlying health clinics, and operating veterinary, dental, health, and preventive medicine services in support of the Frankfurt military community.

The geographical area serviced by the FMEDDAC totals 5500 square miles with a patient population of approximately 130,000. The FMEDDAC has command and operational control over all medical facilities that provide health services support to military communities spread throughout this vast area.

The FMEDDAC, like most military organizations in Europe, is going through a transitional phase involving considerable change. The Conventional Forces Europe (CFE) are in the midst of a draw-down, prompted by budget and politically driven reductions in forces.

The draw down has concomitantly, changed the level of medical support required in Europe. As a result the 97th General Hospital is being converted to the 51st Combat Support Hospital in August 1993, which requires substantial changes in mission and staffing levels. The transition is complicated by ongoing renovation construction, which has forced the relocation of several clinics and services.

Additionally, the Joint Commission on Accreditation of Healthcare Organization's (JCAHO) initiative, an "Agenda for Change" requires all health care organizations to focus on quality of care with devotion to improvement, and to develop and implement a national performance measurement database to stimulate continual improvement. JCAHO's goal has prompted the FMEDDAC's leadership to begin developing and implementing a total quality management/continuous quality improvement (TQM/CQI) plan.

The above mentioned changes, combined with the previous Desert Shield/Storm expansion have caused considerable turbulence within the FMEDDAC. These changes had a negative impact on the delivery of obstetric and gynecology (OB-GYN) services at the 97th General Hospital's OB-GYN Clinic. The clinic was relocated initially from the B500 wing to H300 in

January 1991. Shortly thereafter, it moved to H400 and again to its present renovated location, D400.

The OB-GYN Clinic is composed of seven military physicians, two part-time CHAMPUS physicians, one local national physician, two military clinical nurse midwives, one military nurse practitioner (who is slotted in the head nurse position), five military paraprofessionals and two civilians (who are cross trained to screen patients, perform neonatal stress tests and act as chaperons), one secretary and one receptionist. The clinic diagnoses and treats a cross-section of obstetrical and gynecological conditions. In addition to its outpatient activities, the clinic's military physicians and midwives staff the labor and delivery unit, and military physicians also perform a variety of OB/GYN surgeries in the operating room (OR).

Conditions Which Prompted the Study

The Deputy Commander for Clinical Services (DCCS) is concerned about patient perceptions and complaints involving the OB-GYN Clinic. Patients believe there are an insufficient number of PAP smear appointments available to meet demand. There is considerable dissatisfaction with lengthy waits encountered by patients trying to obtain appointments for chronic

gynecological problems. One Family Support Group member cited a recent five-month wait for a chronic gynecology appointment, during which time she was told the problem was not worrisome (implying that this is a common patient concern).

The OB-GYN Clinic was chosen as a site to implement the principles of TQM/CQI early, due to this dissatisfaction with the growing number of patient complaints concerning access, and staff morale.

A baseline survey (see Appendix C) was conducted with the in-house staff which revealed general dissatisfaction resulting from what they perceive as inadequate staffing, poor communication and lack of support from Headquarters/Command.

#### Statement of the Problem

Our patients, the in-house staff and the hospital's leadership are concerned about the present state of customer satisfaction in the OB/GYN Clinic. They feel steps must be taken to improve the process of delivering OB-GYN services at the FMEDDAC by using TQM/CQI tools and principles. The challenge is to identify and reduce process variation and thereby improve internal and external customer satisfaction.

Literature Review

According to TQM/CQI philosophy, meeting customers' needs is the operational definition of quality. As statistical techniques are employed in this study to assess parameters effecting perceived quality and the meeting of customer needs, the process (delivery of OB-GYN services) will likely improve. The concept of customer applies internally as well as externally: persons and units function as both service providers and customers at every level and in every process of a health care organization.

Every service organization must be somewhat responsive to its environment, but those that wish to excel must try to anticipate change and plan for it before its impact becomes critical (Smith, 1990). More than any other concept of organization and management, TQM/CQI offers the potential to positively affect every health care organization. TQM/CQI can also be used as a means to such ends as cost containment and downsizing. TQM/CQI is a comprehensive, realistic, and practical approach that can help medical facilities function the way they should. TQM/CQI views all work as a process, clinical and managerial. Over a period of time, it will teach employees to see beyond their own immediate tasks and roles. It seeks to make

everyone more cognizant of the larger work processes of which they are a part (Labovitz, 1991).

#### TQM/CQI Implications/Applications for Health Care

##### Historical perspectives

The historical roots of TQM lie in the work of 19th century efficiency expert Frederick W. Taylor. His contribution, the "scientific method" can be summed up in one sentence: "If you want to improve what you do, take a close look at how you do it" (Rose, 1992). This concept provided the fundamental break from longstanding tradition: "If you want to make the boat go faster, whip the oarsmen harder (Rose, 1992)."

The next milestone occurred near the end of World War I when Walter A. Shewhart, a Bell Laboratories physicist, was tasked to design a radio headset for military use. In establishing design parameters from anthropometric data, Shewhart observed that differences in human head breadth (the distance between the ears) seemed to be symmetrically distributed; that is, they followed the famous bell-shaped curve. He wondered if this phenomena might be present in man-made processes as well, particularly those associated with the manufacturing work of his employer. After considerable

study, he concluded that almost all types of repeatable activity, either manufacturing or administrative, exhibited this property of variation. Shewhart developed a system of measuring variation called "statistical process control (SPC)" (Rose, 1992).

During World War II, the War Department hired Dr. W. Edwards Deming, a Shewhart student and researcher at the Census Bureau, to teach SPC methods to the U.S. defense industry. The effort was a great success and deemed so critical that the techniques were classified as military secrets (Rose, 1992).

After the War, there was a tremendous worldwide demand for U.S. goods. The industrial complex in the United States made a quick shift in attitude away from quality and toward quantity. Interest in SPC diminished and American industry chose a path of quality control and quality assurance that was dependent upon inspection at the end of the process or production line (Rose, 1992).

The TQM philosophy, which had originated in the U.S. was further developed by Dr. W. Edwards Deming and others. Dr. Deming went on to fully cultivate and perfect the TQM philosophy. His ideas took hold and flourished in post-World War II Japan (Arikan, 1990). The Japanese institutionalized the following chain

reaction: Improve quality, decrease costs, improve productivity, capture markets, stay in business, provide more jobs. TQM became their way of life. Unfortunately, Dr. Deming's theories have been largely ignored in the U.S. until recently (Rose, 1992).

Why TQM/COI?

The shortcomings of the U.S. health care system are serious. Specifically evident are soaring costs and the fact that millions of American citizens lack adequate medical coverage. These flaws have become increasingly apparent, and are reminders that the system needs to be fixed and perhaps radically modified. Present day fiscal pressures dictate the need for balancing costs and quality concerns. Quality concerns have moved to the forefront because of the fear that quality may be sacrificed by cost-containment efforts, and the recognition that quality will be the measure of success in the future (Ehrat, 1987).

The European military medical community has also been presented with a significant challenge, that of providing health care to eligible beneficiaries in a rapidly changing environment. The 7th Medical Command is expected to provide an adequate quantity of health care, while maintaining quality, during this era of

rapid downsizing, budget cuts, and unpredictable troop strengths.

What is the common-sense solution to these health system problems? According to many the principles of TQM/CQI can address a substantial number of the problems involving waste, unnecessary treatments, and overcharging. TQM promotes the idea of seeking quality before profits. This concept contends that if quality is achieved, profit will take care of itself. The formulation of CQI strategy is perhaps the capstone of TQM.

Donald Berwick (1989) popularized the view that CQI could and should be applied to medicine since its principles could be effective in overcoming "waste, rework, complexity, and error" in the health care system (Re, 1990).

Customers are a critical component of TQM. They exist on two levels: internal and external. External customers are usually obvious and easy to identify. Internal customers (e.g., physicians) are less obvious, but often far more important to the process. Satisfying internal customers is the key to controlling variation, because it is the internal customer who defines process thresholds. The customer service approach should not view customer satisfaction as a

goal or an end in itself. Content customers only define quality in a present state. They serve as a starting point for CQI. Quality is not a matter of "good enough"; it is a matter of "how good can it be?" (Rose, 1992).

Applications and Implications

The adaption of the TQM/CQI philosophy and tools to today's hospitals, their staffs and physicians is a major challenge facing today's health care system. Now that TQM/CQI is a part of the revised Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standards, hospital managers are wiser if they truly embrace the principles of TQM/CQI. This transition to TQM began with the Joint Commission's "Agenda for Change" initiative.

The "Agenda for Change" is a set of Joint Commission initiatives designed to modernize its accreditation process and to encourage continuous improvement in the performance of important governance, managerial, clinical, and support functions in health care organizations. The "Agenda for Change" began in 1987. Its major goals are: to thoroughly recast standards to emphasize effective performance of the important organizational functions; to improve the

survey and decision-making processes; and to create an interactive information system based on reliable and valid indicators of organizational performance (Joint Commission, 1992).

The Joint Commission has an obligation to actively communicate its intent and implications in executing the "Agenda for Change" initiative. The Joint Commission should not require hospitals and other health care organizations to adopt specified CQI practices. However, the Joint Commission's bottom line is performance, or more precisely, continually improving performance (O'Leary, 1992a).

The Joint Commission believes that CQI is perhaps the best means for achieving improved performance in health care organizations. However, they do not presume to know, nor do they seek to impose, the best approach as if there were "one best way" to manage. None-the-less, certain basic CQI concepts will become increasingly evident in future Joint Commission standards (O'Leary, 1992a).

The mission of the Joint Commission is to improve the quality of health care provided to the public. Accordingly, the leadership's commitment to quality places emphasis on the functioning of internal systems and processes. Performance measurement and other

selected CQI concepts will be central themes in future survey standards (O'Leary, 1992a).

Continuous Quality Improvement does not place an emphasis on outcomes, but the Joint Commission maintains such continuous improvement efforts must have a positive impact that is reflected in patient outcomes. Therefore, performance measurement in health care organizations should address both process and outcomes (O'Leary, 1992a). Outcomes management and CQI are both important. Neither is sufficient by itself, and it would be naive for health care organizations to rely solely on one or the other (Reinertsen, 1993).

Individual performance will still remain an important concern. What will change is the relative emphasis on process issues, as opposed to individual performance issues. One of the most useful perspectives set forth in CQI concepts is that the overwhelming proportion (greater than 90%) of problems, or opportunities for improvement, lie in the functioning of internal processes. At the same time, if process issues constitute approximately 90% of possible actions, an influential remaining 10% of the issues are attributable to individual performance. Adverse occurrences often constitute the organization's most important opportunities for improvement. In any

event, the overarching objective is continual improvement resulting in desired outcomes, not punishment (O'Leary, 1992a).

The deliberate or unintended exclusion of physicians from focused patient care TQM/CQI initiatives is at the very least, an inconsistency. More to the point, it can eventually become a problem. Most hospital CQI initiatives originate with the senior management staff. Among this group there is a common belief that the first priority is education of organizational leaders, which may include clinical leaders such as medical directors or nurse executives. Once initial orientation and education have run their course, there is a strong tendency in health care organizations to concentrate initial improvement efforts on administrative and support activities. Such activities are viewed as being more susceptible than clinical care to effective CQI applications. The successes achieved then provide the basis for demonstrating to physicians that CQI works, thereby winning their support. This strategy is easy to follow, but it is incompatible with the collegiality and teamwork envisioned by CQI (O'Leary, 1992b).

The fear of physician resistance to, or even sabotage of, CQI endeavors is real. CQI employs a

language that is unfamiliar to most physicians. Terms such as "empowerment" and "cross-functional teamwork" are viewed with suspicion, and reference to patients as "customers" is often ridiculed by many physicians (O'Leary, 1992b).

The physician's experience with quality assurance (QA) has generally been unpleasant and frustrating. In addition, the relevance of QA activities to improving patient care has been unclear to most. Because QA was "imposed" by the Joint Commission and CQI is seen as "management's idea," many physicians take a cautious posture relative to new quality assessment and improvement strategies. Improvement is not an ethereal concept. Improvement should result in better patient care and the ability to document desired results. Better patient care requires physician involvement in quality assessment and improvement activities. The absence of early physician involvement in CQI initiatives may eventually endanger a hospital's accreditation status (O'Leary, 1992b).

Continuous Quality Improvement (CQI)

In order for the FMEDDAC OB-GYN Clinic to achieve its goals, everyone assigned should be dedicated to continual improvement. It should be an unending

process. The belief must be that things can always be, and should be, improved. However, improvement in the TQM/CQI process can have a slightly new meaning.

Instead of thinking of improvement in terms of major programs or changes that can only be carried out by senior leadership or technical experts, improvement can and should also be seen as incremental, small changes. These types of changes can be carried out at all levels of an organization. The Japanese call this gradual type of improvement "Kaizen". Kaizen must become ingrained at every organizational level (Imai, 1986).

There are dangers however. Instead of clearly formulated goals and comprehensive programs for achievement, decision makers have a tendency to make incremental changes in response to immediate pressures. An overriding variable in most organizational decision making is the limited time available for the many stages of solution formation. Decisions may be required before information can be adequately analyzed (Katz and Kahn, 1978 p.501).

Moreover, an important problem with this strategy is disjointed incrementalism---the fragmentation of decision making among many centers in imperfect communication with one another and stifled by their own cognitive limits of rationality (Katz and Kahn, 1978

pp. 494-498). This tendency toward bounded rationality can be especially prevalent in the military health care environment, where individuals are accustomed to addressing problems within their own disciplines.

Continuous Quality Improvement requires thorough examination of the way one does business and involves the use of the scientific method. The scientific method requires the researcher to select an area of study, observe and determine what is known, generate hypotheses (about causation), test those hypotheses, collect data and act on the findings (Ente, 1992). The scientific method is a systematic approach that allows individuals and process action teams (PATs) to improve their operations by examining and improving their areas of responsibility. It means basing decisions on relevant information rather than presage, looking for underlying causes rather than reacting to symptoms and seeking permanent solutions rather than relying on quick fixes. It will also require seeking understanding of and controlling the process variation inherent in the OB-GYN Clinic's operations.

#### Variation

Statistical thinking in CQI can be defined as a thought process, which recognizes that variation is all

around us and present in everything we do. All work is a series of interconnected processes, and identifying, characterizing, quantifying, controlling, and reducing variation will provide opportunities for improvement (Snee, 1990). Improvement cannot be attained and maintained without examining the possible causes of variation.

Variation is an extremely important concept in measuring conformance, but is often misunderstood. All processes vary. Administrators, nurses, and physicians all make their decisions based on process variation. Their actions are different based on the type of variation. Variation can be caused by either normal day-to-day random fluctuation (common cause variation) or it can be due to a significant change in the system (special cause variation).

Systems that consist only of common cause variation are said to be stable or in a state of statistical control. This does not mean that the process or its output is acceptable; it simply means that process variation is predictable using statistical techniques. To determine whether a process is stable, a monitoring mechanism is needed (e.g., a control chart). When a process indicator is plotted over time and all points fall within statistically established

control limits (and exhibit no unusual patterns), the process is in control (Rush-Presbyterian-St. Luke's, 1991).

A common misinterpretation of control charts and control limits (used in monitoring variation) is their assumed relationship to management goals. Actually, there is no relationship. Goals, budgets, quotas or other non-statistical management measures are the aspirations of management. These appraisals will not tell us how the process is performing or how we can expect it to perform in the future. Control charts show actual system performance. If that reality does not meet specific goals, parameters of the system, reacting to common cause fluctuations, will only serve to increase variability. On the other hand, when a process indicator is plotted and some points lie outside the control limits, management should act swiftly to determine the cause of the change and calibrate the system accordingly (Rush-Presbyterian-St. Luke's, 1991).

CQI requires a focus on the processes with which we work. Objective data must be collected and underlying causes identified. Managing by intuition, "knee-jerk" reactions or blame shifting are not acceptable styles in organizations committed to CQI.

Organizations espousing the principles of TQM/CQI should not blindly believe that their employees are the problem. Instead, they should first look to the system itself as the cause of poor quality. Managers committed to TQM/CQI should persuade their employees to make themselves and the system more resourceful instead of only working harder.

Concentrating on the process helps managers to avoid wasting time correcting symptoms of problems. Managers who understand process variation and collect objective data, find basing solutions on known underlying causes is much more effective. Managers who are committed to CQI require statistical confirmation of the actual characteristics of the system when making decisions or evaluating alternatives (Rush-Presbyterian-St. Luke's, 1991).

Another reason concentrating on the process is important is that it requires investigation, action and improvement to occur, not only within a particular area, but across functional lines as well. Since the gathered data is unbiased and the tools used familiar to all managers, defensiveness should soon be replaced with teamwork (Rush-Presbyterian-St. Luke's, 1991).

The Scientific Method Approach

Peter Scholtes (1988) identifies four strategies for implementation; they are: collecting meaningful data, identifying the "root cause" of problems, developing appropriate solutions, planning and making changes. These strategies can assist PATs and individuals in actualizing the scientific method (Rush-Presbyterian-St. Luke's, 1991).

Failure to identify root cause is one of the major reasons so many so-called "solutions" fail miserably. It is human nature to react to visible symptoms of a problem rather than look for the underlying cause. Reacting without completely understanding the underlying cause of problems often leads to wasted time and resources. To identify potential causes of problems, PATs must first have a common understanding of the process they are examining. The best way to describe a process is by drawing a step-by-step schematic picture of it (i.e., Flowcharting) (Scholtes, 1988).

Once a PAT has a thorough understanding of their process, they can use other tools (e.g., Brainstorming, Cause and Effect Diagrams, Force Field Analysis, Tree Diagrams, Matrix Diagrams, Affinity Diagrams and Interrelationship Diagrams) to help identify underlying causes of variation (Brassard, 1986).

In pursuing appropriate solutions PATs must use objective information to support their hypothesis of the "root cause". A basic tenet of CQI is to develop solutions that really solve problems. Throughout a project, PATs should make obvious changes that are easy to implement and have few, if any, negative side effects. PATs should avoid not being able to attribute these improvements to their primary recommended solution. Recommended changes to a process should result in a measurable improvement. Changes to a process should not be made just for the sake of change. However, it usually requires change to solve most problems. The only way to really solve problems is to eliminate their causes. Before implementing proposed solutions to problems, PATs should consider the following questions: 1. Who are the customers of the process, what are their needs and expectations and how will the proposed changes affect them? 2. What constraints exist that limit options (e.g., budget, organizational policies, unwritten rules or "sacred cows", technical abilities of the team)? 3. What are the possible effects of the proposed solutions (e.g., increase or decrease of financial or human resources, employee safety and health, training)? 4. Are the systems in place to support the proposed changes (e.g.,

leadership support, training etc.)? (Rush-Presbyterian-St. Luke's, 1991).

FOCUS-PDCA is a strategy that provides a roadmap for CQI. FOCUS-PDCA is an acronym meaning: Find a process to improve, Organize a PAT that knows the process, Clarify current knowledge of the process, Understand sources of process variation, Select the process improvement, Plan the improvement and continued data collection, Do the improvement, data collection, and analysis, Check and study the results, Act to hold the gain and to continue to improve the process. This continuous improvement cycle is very similar to the scientific method of experimentation. This is not just coincidental. The FOCUS-PDCA CQI model represents a structured approach to process improvement. The model was developed in the late 1980s by the Hospital Corporation of America. Organizations implementing CQI should continually investigate new ways to satisfy their customers. Identifying the processes that exist and prioritizing them using process analysis is most useful.

The goal of CQI is to implement changes and learn how to make future changes go even more smoothly. FOCUS-PDCA is a process that comes naturally and makes sense to most managers. Nevertheless, managers in

organizations without a CQI focus sometimes forget to complete the cycle. The management equivalent of this poor research method is called "crisis management". In some organizations managers are rewarded for short term thinking and their crisis management ability. Condoning this management style allows valuable information to be lost and prevents continual improvement from being achieved (Rush-Presbyterian-St. Luke's, 1991).

#### CQI Tools

Basic statistical tools are frequently used as part of the CQI process. These tools help PATs visualize a process, isolate problems, determine their causes and decide on solutions. They also provide a way to evaluate proposed changes.

Before PAT members can make a decision, they must make sure they have examined as broad a range of options as reasonable. One way to generate a list of ideas is to "brainstorm". Brainstorming is a group decision making technique designed to generate a large number of creative ideas through an interactive process.

A successful brainstorming session allows PATs to be as creative as possible. Rules for conducting a

brainstorming session include: 1. Encourage everyone to freewheel: don't hold back on any ideas even if they seem silly at the time; the more ideas the better. 2. No discussion during the brainstorm (this will come later). 3. No judgement signals. No one is allowed to criticize another's ideas, not even with a groan or a grimace. 4. Let people "hitchhike" - build upon ideas generated by others in the group. 5. Write all ideas on a flipchart so the whole PAT can easily scan them (Scholtes, 1988).

The facilitator should feel free to modify the procedure to fit the group and the topic. For instance, one could have everyone write down ideas, then go around the group and have each person say one of their ideas, continuing in this way until everyone's list is complete. Or one could do the entire sequence in stages: first, have everyone in the group think of minimal or partial solutions to a problem; then, the most outrageous, unconventional or expensive solutions; then try to synthesize the ideas jointly into reasonable alternatives. Be particularly alert for ways to combine suggestions (Scholtes, 1988).

Process analysis is another tool which can be used to help PATs select improvement projects, prioritize them and begin to make measurable changes. It can be a

key to the success of a PAT's efforts as they begin to work on the CQI planning process.

A major goal of many PATs' quality improvement planning will be to improve the efficiency and effectiveness of operations by eliminating waste, saving time and reducing costs. Process analysis can be a successful tool through which PATs realize this goal (Rush-Presbyterian-St. Luke's, 1991).

When cross-functional PATs pursue process analysis as a part of simplifying a combined function, they often begin to develop a deeper understanding and respect for the work processes and contributions of the other group or groups. Process analysis can lead to improved communication about shared work and expectations and therefore to a deeper understanding of roles and barriers. Most importantly, it often results in the development of increased teamwork between groups (Rush-Presbyterian-St. Luke's, 1991).

Process Action Teams can use process analysis to build communication, understanding and teamwork. Analyzing their work as a group, tends to draw team members together. The steps in process analysis are as follow: 1. Using the primary function worksheet, the PAT should brainstorm a list of all process functions and enter them into the first column. Functions listed

should be specific and observable. They should contain an action verb and a noun. Asking the question "What do we do?" can help prompt the flow of ideas. 2. Functions should then be prioritized to determine which one will become the subject of the PAT's quality improvement project. Prioritization should be done using the following criteria: high risk, high volume, problem prone, high cost of "poor" quality when not done right the first time, and relationship to the organization's vision of quality (Rush-Presbyterian-St. Luke's, 1991).

In the initial stages, a project should be chosen which offers high opportunity for success in quality improvement. Early successes provide reinforcement of CQI methodology, as well as a sense of satisfaction for PAT members. The prioritized list should provide an outline of processes to be improved over time (Rush-Presbyterian-St. Luke's, 1991).

Once the process is selected for improvement the PAT must seek to examine it in depth to identify areas for improvement. This is best done by breaking the process into individual tasks using the flowcharting process. Flowcharts are graphic representations of the flow of a process. They are a useful way to examine how various stages in a process relate to one another,

to define the boundaries of a process, to identify multiple customer/supplier relationships, to verify or form the appropriate PAT, to create a common understanding of the process, to determine the current method of performing the process, and to identify redundancy, unnecessary complexity and inefficiency in a process. Flowcharts are step-by-step schematic pictures used to plan stages of a project or describe a process being studied. As outlines of a sequence of actions, they provide PAT members with common reference points and a standard language to use when talking about an existing process or project. They can also be used to describe a desired sequence and order a new improved system. A detailed flowchart includes a lot of information about what happens at every stage in a process, including loops caused by rework. A flowchart is constructed by first developing a list of tasks involved in the process. A diagram is then constructed placing each task in a box. The boxes are arranged in their order of occurrence with the flow illustrated by arrows connecting the boxes. If there are decision points, then a diamond shape is used with the flow outlined for each option. Beginning and end points are illustrated using oval shapes (Rush-Presbyterian-St. Luke's, 1991).

Flowcharts help PAT members understand the process they are trying to improve. The flowchart becomes the foundation for further study. The construction process brings to light areas of misunderstanding about the process. Posting the flowchart for all employees to see is often a good way to generate interest and promote understanding of the improvement process. Flowcharts are one of the most basic tools of CQI.

\* Operational Definitions - see Appendix A.

Purpose of the Study

The purpose of this study was to identify the components of overall customer satisfaction/dissatisfaction in the FMEDDAC OB-GYN Clinic using TQM/CQI tools and principles. By identifying and testing the effects of each component of customer satisfaction, the FMEDDAC OB-GYN Clinic will be able to determine ways to improve overall performance, as it relates to customer satisfaction.

This study will enable managers to evaluate customer satisfaction components in their OB-GYN Clinics and will assist them in making decisions concerning customer satisfaction.

**Methods and Procedures**

Some strategies for implementing TQM/CQI principles include:

- a. Teaching all organizational levels the techniques for implementation of empowerment.
- b. Systematically reducing unnecessary levels of management that impede the empowerment process.
- c. Decentralizing problem-solving and decision-making by shifting to individual and group authority with accountability.
- d. Defining those responsibilities which require individual or team effort and the individuals who will be held accountable.
- e. Expanding individual responsibility for analyzing, evaluating, and creating solutions for increased productivity and quality.
- f. Encouraging unlimited individual empowerment through education, training, coaching, and mentoring.
- g. Requiring upper level management to expand their depth of understanding and ability to manage the empowerment philosophy.
- h. Requiring regular follow-up training to reinforce and institutionalize the empowerment philosophy.
- i. Instituting an open style of communication

which encourages trust, interdependence, and teamwork.

j. Regularly demonstrating to employees that they are valued and are the organization's most important resource.

Strategies listed above were modified for this study because the FMEDDAC has not completed its initial TQM/CQI implementation plan. As a part of this study, data collection was conducted using pre and post surveys, the clinic's staff was educated on TQM/CQI and a PAT was organized and facilitated.

This research project began with the use of satisfaction surveys to identify opportunities for improvement, flowcharts to map out clinic processes, and by using the "Nominal Group Technique" and "Brainstorming" to guide the OB-GYN PAT through the procedures of finding solutions to identified problems.

The PAT included:

Members - Administrative Resident (Facilitator)

Physician, OB-GYN Clinic

Certified Nurse Midwife, OB-GYN Clinic

Administrative Officer, Clinical Support

Division

Head Nurse, OB-GYN Clinic

Civilian Receptionist/Booking Clerk OB-GYN Clinic

**Consulted - Consumers (internal and external)**

Health Benefits Advisor, Patient

Administration Division

Patient Representative, Quality

Services Division

NCOIC, OB-GYN Clinic

Chief, OB-GYN Clinic

The single greatest challenge for the PAT during the study was changing the mind-set of staff members from "this is the way we've always done it" to "working smarter, not harder."

In starting this TQM/CQI Project, the PAT was advised to determine: 1. Who the clinic supports; 2. The clinic's composition (e.g., staff, equipment, physical layout); 3. What their patient and staff complaints were about; 4. Why CQI is needed; 5. What needs to be improved; 6. How to measure performance; and 7. Whether there is motivation for improvement/change.

Upon accomplishing the above mentioned initial steps, the team proceeded to: 1. Find a process improvement opportunity (e.g., patient flow), 2. Organize and ensure that everyone on the team knew the TQM process, 3. Clarify current knowledge of the

process, 4. Uncover root causes of process variation, 5. Start an improvement cycle (i.e., PDCA), and 6. Monitor and evaluate.

The technique used to "brainstorm" or evaluate alternative solutions presented by members of the PAT is the "Nominal Group Technique." The Nominal Group Technique is a group process technique designed to efficiently generate a large number of ideas through input from individual group members. This method is one of the better known of the formal group decision-making techniques (Hiam, 1990).

Once, an improvement alternative was identified, time logs were used to measure changes in the process, two weeks before and two weeks after the PAT's recommendation was implemented. The overall objective was to bring about improvement in customer satisfaction (both external and internal) through the use of TQM/CQI tools and principles.

#### Staff Survey

A staff survey was used to evaluate employee satisfaction and overall knowledge of TQM/CQI in the OB/GYN Clinic, before and following the implementation of this study's TQM/CQI initiatives within the clinic. The staff satisfaction survey asked for information

related to staff job satisfaction in the OB/GYN Clinic and their current knowledge of TQM/CQI. For example, questions pertaining to job satisfaction were presented: "I like my supervisor." The survey used a five point Likert-type bipolar adjective item scale with descriptor ranges from: 1-Strongly Disagree to 5-Strongly Agree. The initial (baseline) and post surveys, with results, can be found in Appendices C and D respectively. No trial survey was conducted for the staff satisfaction survey as this survey had been successfully used by the U.S. Air Force in the implementation of their TQM program.

The initial survey was conducted in November 1992. The staff satisfaction survey contained 12 satisfaction questions, 4 TQM involvement questions and a request to identify what the staff perceived as problems within the clinic.

The second follow-up survey was given to OB/GYN Clinic staff members in May 1993. Staff members completed the surveys and returned them either to a survey collection box or the resident.

The staff satisfaction survey had four sections to grade. The first section, concerning attitude towards the supervisor, included questions one through four. The second section, questions five through seven,

pertained to cooperation. The third section dealt with the work environment and included questions eight through twelve. These three sections were averaged together to rate overall staff satisfaction. The TQM/CQI section was used to determine awareness.

#### Outpatient Satisfaction Survey

Subjects for this study were outpatients using the FMEDDAC OB/GYN Clinic during a five month period between January and May 1993. Patients were asked to complete a satisfaction survey and return it, either to the receptionist or to a survey collection box located at the clinic's exit. The study used a random sample of 454 surveys. The receptionist, triage nurse and screener were briefed on how the surveys were to be distributed, prior to initiating the survey. Each patient was offered a survey and asked to complete it prior to leaving the clinic. Each patient determined whether or not she would comply. Participation was strictly voluntary and no attempts were made to identify survey participants.

#### Survey Design

The patient satisfaction survey contained demographic and personal questions on the front page.

The patient was asked to respond to questions regarding their age, appointment type, race, distance of travel, duty status, etc. (see Appendix D).

The lower third of the front page and the back page of the survey contained patient satisfaction questions. For example, patients were asked to rate their satisfaction with, "Clinic hours of operation?" Each question progressed the patient through the clinic's patient flow process from their initial contact (seeking care) till they were seen by a provider.

Patients were instructed, "Thinking about your medical care, indicate your response by circling the number that best describes your feeling about our service." The questionnaire was completed anonymously by a random sample. Each question was rated by the patient according to how well she liked a particular aspect of the OB-GYN Clinic's service. Each question was graded on a five point Likert-type bipolar adjective item scale with descriptor ranges: (1) Poor, (2) Fair (3), Good (4), Very Good and (5) Excellent. Questions patients rated as non-applicable were listed as missing.

Reliability and Validity

Validity refers to an instrument's accuracy and reliability refers to an instrument's consistency.

Reliability of the data collection instrument concentrates on the dependability of the measure. The outpatient satisfaction survey in this study dealt with validity and reliability by using survey questions which had previously demonstrated high validity and reliability.

The outpatient satisfaction survey was designed using the Dixon (1991) patient satisfaction questionnaire, which used the Stamps (1978) patient satisfaction questionnaire as a prototype. Both questionnaires had previously demonstrated high reliability. The Stamps (1978) patient satisfaction survey used a Cronbach coefficient alpha, a split half reliability test and demonstrated a reliability measure of .92 (Dixon, 1991).

The validity and reliability of the survey instrument used in this study was further corroborated with a survey conducted by Press, Ganey Associates Incorporated of South Bend, Indiana, a firm that specializes in patient satisfaction measures. They polled nearly 140,000 patients to rate 49 issues as to which influenced them most in reference to quality of care. Each of the 49 questions ranked with correlation

factors ranging from 62 to 94 on a scale of 100. The survey in this study used questions from the Press, Ganey Associates survey (Hospital Peer Review, 1992) and from the Dixon (1991) survey.

The outpatient satisfaction questionnaire for this study was reduced to 28 items, of which 18 were patient satisfaction questions and the other 10 demographic questions. Survey questions were primarily modeled from the Dixon (1991) study. However, questions 9 and 10 concerning patient privacy and staff sensitivity were modeled from the Press, Ganey survey and both questions demonstrated .94 correlation with overall satisfaction (Hospital Peer Review, 1992). Question 12 and the two comment questions were designed specifically to clarify the PAT's understanding of the clinic's processes.

Responses to outpatient satisfaction surveys were compiled and a statistical analyses was conducted using MICROSTAT (version 4) to compute descriptive statistics (see Appendix F). These computations were compared and contrasted for pre and post surveys.

### **Results**

Baseline and follow-up satisfaction and TQM/CQI knowledge surveys were conducted (see Appendices C and D) with the OB/GYN Clinic staff. Results indicated no

statistically significant differences between the baseline and follow-up surveys (as seen in Table 1.).

**Table 1.**  
**Baseline and Follow-up Staff Survey Comparison**

	Baseline	Follow-up	Variation
Supervisor	4.5	4.3	.2
Cooperation	3.6	3.6	0
Environment	<u>3.0</u>	<u>3.4</u>	.4
Morale	3.7	3.8	.1
TQM/CQI (Awareness)	3.6	3.7	.1

Upon reviewing outpatient satisfaction surveys, preliminary results demonstrated that the two areas with the lowest mean scores would be opportunities for improvement. Those were: 1. Access and 2. Delays in seeing a provider. The OB/GYN PAT used FOCUS-PDCA to address the patient delay process. The descriptive statistics (see Appendix F) revealed no statistically significant differences between pre and post outpatient satisfaction surveys. However, the areas showing greater than .1 positive increase in mean scores included access with a .2 increase and delay in seeing provider, with a .13 increase (see Table 2.).

**Table 2.**  
**Pre and Post Outpatient Satisfaction Survey Comparison**

	PRE-SURVEY			POST-SURVEY			<u>DIFF</u>
	N	MEAN	STD.DEV.	N	MEAN	STD.DEV.	
Q1	324	3.57	.87	116	3.57	.92	0
Q2	316	3.34	.98	118	3.38	1.13	.04
Q3	322	2.88	1.37	120	3.08	1.29	.20
Q4a	313	3.89	.93	118	3.92	.91	.03
Q4b	281	3.72	1.09	105	3.69	1.08	-.03
Q5	311	3.92	.95	115	3.91	.99	-.01
Q6	295	4.16	.78	113	4.09	.82	-.07
Q6a	300	4.08	.79	115	4.01	.85	-.07
Q6b	281	4.03	.86	105	3.99	.96	-.04
Q7	243	3.72	.99	94	3.72	1.17	0
Q8	302	3.07	1.19	117	3.20	1.12	.13
Q9	283	3.78	.90	111	3.81	1.02	.04
Q10	260	3.58	1.03	97	3.57	1.14	-.01
Q11	291	3.36	1.05	116	3.28	1.15	-.08
Q12	282	3.61	.89	111	3.67	.95	.06
Q13	299	3.80	.96	115	3.77	.96	-.02
Q14a	259	3.64	1.00	89	3.65	.95	.01
Q14b	270	3.79	1.02	105	4.01	1.02	.22
Q14c	156	3.85	.96	49	4.00	1.10	.15
Q15	280	3.78	1.07	102	3.86	1.15	.08
Q16	295	3.81	.89	119	3.89	.96	.08

The most significant indication that the PAT had a positive effect on reducing the--delay in seeing the provider--process is somewhat subjective. The positive change can be seen in the overall tone of the comments encountered in the post-survey as opposed to the pre-survey. The difference can be best visualized in Table 3.

Table 3.

Dissatisfaction Comments Comparison  
Between Pre and Post Surveys

TOTAL	ACCES	DELAY	OTHER	RATIO	RUDE	PARK	SIGNS
PRE* 176C/ 333S	68	38	36	15	7	7	5
52.7%	38.6%	21.6%	20.4%	8.5%	4.0%	4.0%	2.8%
POST* 63C/ 121S	25	14	15	7	2	0	2
52.1%	38.5%	21.5%	23.1%	10.8%	3.1%	0%	3.1%

\* The C indicates total Comments versus S for total Surveys.

As seen from the Table the "Other" category of complaints overtook the "Delay" category's second place ranking of all the dissatisfaction comments in the Post-Survey. This decrease in the overall ranking for the "Delay" category can be interpreted as a positive effect. Another visualization of this interpretation can be seen in the Pareto Chart breakdown of dissatisfaction comments, located in Appendices G and H respectively.

Two weeks prior to and two weeks following the implementation of the PAT's recommendations, time logs (see Appendix I) were employed to see if there would be any real improvement in actual time delay experienced by the patients waiting to see a provider. No significant changes were seen.

### Discussion

The Deputy Commander for Clinical Services (DCCS), Patient Representative and a community family support group had identified patient dissatisfaction problems with the FMEDDAC OB-GYN Clinic. The Deputy Commander for Administration (DCA) and the Administrative Resident, along with other hospital leaders determined that a study with a focus on TQM/CQI would be mutually beneficial for the Resident (as a learning experience), the OB-GYN Clinic (to become more aware of TQM/CQI) and the FMEDDAC by addressing patient dissatisfaction.

The education process was initiated by the Resident becoming more familiar with the intra-workings of the clinic. This was accomplished through observation and interviews with key staff members associated with the OB-GYN Clinic. In addition to the formal TQM/CQI education process already established by the FMEDDAC Quality Services Staff, the Resident began to familiarize the OB-GYN staff with TQM/CQI by circulating literature pertaining to the subject and through informal discussions with various members of the staff.

Early in the study, the Resident conducted a staff baseline survey (see Appendix C) which revealed several areas of discontent among OB-GYN staff members. In

order to gain a better understanding of processes within the clinic and to establish creditability, the Resident agreed to assist in the resolution of several logistics, maintenance, personnel and administrative problems within the service. In retrospect, this action may have made some managers at various levels uncomfortable. Consequently, initial acceptance of the Residents presence, within the clinic was mixed.

The Chief of the Service provided only tacit support. The Head Nurse was somewhat reluctant and suspicious. The Branch Chief of Clinical Support Division (CSD) viewed the Resident's presence as a possible threat to his position. The NonCommissioned Officer-in-Charge (NCOIC) was uncooperative. Several issues the Resident began to work on, concerning maintenance and equipment, reflected directly on the capabilities of the NCOIC. Initially, the NCOIC had the Head Nurse talk to the Resident about being a "threatening" presence. Needless to say, the study began on a precarious note.

Time was spent initially testing surveys and learning about ongoing processes in the clinic. There were some interesting organizational behaviors found within the clinic. There appeared to be two (possibly three) separate and distinct groups involved in the

clinic's operation; (i.e., 1. Providers [physicians and midwives], 2. Nurses, and 3. Paraprofessionals [NCOs, receptionist/ booking clerks and civilian practical nurses]). These groups are further separated throughout the entire service (i.e., the clinic, Labor and Delivery, Nursery and Postpartum). Since these groups have very distinct and closed communication links, there appeared to be several areas in the service where communication was poor. The lack of (or minimal) cross-level communications inevitably caused misunderstandings and occasionally created friction among the groups.

Organizational accountability (who reports to whom) was not clear. The service's established rating schemes failed to provide proper focus on the importance of clinic/service issues. There appeared to be three distinctly different agendas being pursued by providers (physicians and nurse midwives), the head nurse and enlisted staff. Some providers seemed preoccupied with personal/quality of life issues. The Head Nurse pursued issues specific to the interests of the nursing staff, and the NCOIC was most concerned about soldier (i.e., junior staff) issues. There was not a collaborative effort by the Clinic's staff to manage patients effectively through the system.

For example, when the clinic staff was asked to increase the number of Dysplasia appointments, in order to reduce a sizeable backlog, they responded and scheduled more Dysplasia clinic appointments. However, the additional appointments were scheduled on Thursday morning, a preset U.S. Army Europe-wide training time period (Sergeant's Time). In what appeared to be a passive/aggressive act, the physician who made out the schedule loaded Thursday morning's schedule with clinics to include a Dysplasia clinic. This was done without consulting the Head Nurse or NCOIC. Consequently, the NCOIC had difficulty allowing clinic soldiers to participate in previously scheduled training. The physician's response was, "If headquarters wants more Dysplasia clinic appointments, then this is the time we will give." This was done without rationally looking at other available free time, such as "frozen schedules" or reevaluating how leave time is allocated. For example, frequently there were up to four physicians away from the clinic during a one week period (e.g., leaves, medical boards, personal time, etc.). The number of providers absent at any one time should be limited to two. Other groups are not totally inculpable. For example, the Head Nurse and the NCOIC went to the weapons training range

on the same day, leaving the clinic without a staff member sufficiently experienced to make supervisory/administrative decisions. Also, no guidance had been given by the clinic's Chief on how to process or reschedule appointments when providers call in sick or cancel clinic appointments. The nursing staff has the dilemma of either attempting to ask remaining providers to cover or rescheduling angry patients. Other providers in the clinic say they are overburdened and often refused overload. These issues are enumerated to highlight the need for change and the fact that the environment in this clinic was less than optimal for marketing the TQM concept to those participating.

Throughout the study, issues affecting customer satisfaction became "moving targets". The number of personnel assigned or available fluctuated, often. Issues affecting workload (e.g., abortions, epidurals, and equipment) were constantly changing and the specter of rapid downsizing, looming over the community, was ever present.

After two iterations of trial surveys, the Resident instituted an outpatient survey (see Appendix D) that polled patient satisfaction with OB-GYN Clinic services. During a three-month time frame (Jan-Mar 93) the satisfaction surveys were distributed randomly to

outpatients who visited the clinic. Results were tallied monthly. Distribution consistency was difficult to maintain, primarily due to assignment changes of personnel at the distribution points (i.e., Triage, Front Desk and Screening Room). Personnel assigned to these areas rotated to new assignments weekly. The Resident was unable to get the NCOIC and the Head Nurse to instruct newly assigned persons on survey distribution procedures. Never-the-less, consistent follow-up by the Resident allowed distribution to continue. Despite these conditions, response to the pre-survey was 37.6 percent, which accounted for approximately 5.5 percent of total clinic visits.

The OB-GYN outpatient satisfaction survey results targeted "access" and "delay in seeing a provider" as improvement opportunities. From those results the chartered PAT began working on understanding those processes.

During this time frame (and prompted by events totally unrelated to the study), the Branch Chief of the Clinical Support Division was reassigned to the Department of Community Medicine, and the clinic's Head Nurse was promoted and moved to the Maternal Child Health Section Supervisor's position. The NCOIC moved

to an Equal Opportunity position elsewhere in the unit.

The PAT was established and the Resident/facilitator attempted to promote an environment of non-attribution. Team members were encouraged to look at each issue honestly and with healthy skepticism. The CQI process was promoted as a long-term way of doing business. The intent was to develop a team. Teamwork contributes to understanding, generating more ideas and options, and sharing responsibility. No one seemed really comfortable being solely responsible for suggesting change.

First, the PAT clarified the clinic's mission. The purpose was to make sure that each PAT member had a common understanding of why the clinic exists, who it is there to serve, and what it is there to do. The PAT identified customer/supplier relationships, inputs, processes, outputs, and the ultimate customers of the OB-GYN Clinic's services.

Teamwork can be a source of great pride, but it is not a substitute for leadership. Teamwork was encouraged, but group dynamics and time constraints prevented the successful realization of a cohesive unit within the PAT. Some PAT members lacked support for their participation from their own disciplines. No true leader emerged in the PAT and the Chief of the OB-

GYN Service provided only consensual support. No one person from the OB-GYN Clinic took ownership of the improvement process. This shortfall may be attributed to the lack of sufficient facilitator training, on the part of the Resident, or the PAT members' lack of understanding of the TQM/CQI process.

When some team members felt threatened by frank and sometimes heated discussion within the group, they sought the comfort of their various disciplines or withdrew (e.g., not showing up for or leaving meetings early - using other responsibilities as an excuse). The separate disciplines within which each member functions seemed to be "vertical stovepipes". Each person seemed accustomed to working out problems within the comfort zone of their own discipline. Airing one's "dirty laundry" to PAT members from other disciplines caused noticeable discomfort. This makes communications among disciplines more difficult. On the other hand, patients engage the system horizontally, thus making cross-functional communications likely and critical.

People from various health disciplines must talk to each other openly about shared customers, about improving quality and about the PDCA cycle if TQM is to be successful. There has to be a critical mass of key

players in the clinic who know something about TQM/CQI, who speak the "same language". The TQM/CQI implementation program at the FMEDDAC had not yet reached that level. Although tentative at times, the PAT team continued to work on improvement opportunities.

The most prevalent problems (identified by the survey) at the FMEDDAC OB-GYN Clinic begin with access (see Appendix G). Many patients complained about their inability to gain access using the current appointment system. Initially, they have great difficulty getting through on the telephone. They are unable to get a timely appointment for a variety of reasons. Consequently, some patients must travel considerable distances to make an appointment within the clinic. This problem is caused by the limitations of the process used to set up appointments. Patients can only call one day a week during specified hours to make appointments. The survey revealed that patients believe that the present appointment system is very frustrating. Comments such as: "It took me four months to get an appointment.", "I could not get through on the phones, they are always busy." and "By the time you get through on the telephones all appointments are gone." were consistent responses when asked, "What is

the most inconvenient aspect of the clinic's current operating procedure?". The appointment process at the FMEDDAC OB-GYN Clinic is generally inefficient, overstressed and disheartening to both the clinic's staff and patients trying to gain entry into the system. The survey also indicated that patients seeking appointments expect to receive one within a "reasonable" amount of time (i.e., 7th Medical Command's 3/10 day standard for active duty/family members respectively). Yet, in most cases the system is unable to satisfy their expectations due to limited provider staff and ancillary support. Small adjustments to the appointment system will do little to improve access and satisfy the existing need, since the basic problem continues to be an insufficient quantity of personnel. This problem will be further exacerbated when the clinic's provider staff is reduced this summer, as a result of normal personnel turnover and the continuing drawdown of military personnel in Europe (i.e., the clinic will be short four providers). Because the staff cannot control these events, the PAT decided against addressing the access appointment problem, other than to recommend disengaging enough family members to bring the delivery workload down to a manageable level.

Another frustration encountered is the long delay between the scheduled appointment time and the time the patient is actually seen by a provider. According to survey comments, some patients have waited two hours (or longer) beyond their scheduled appointment time before being seen by a provider. Research shows that patients and staff have greatly varying views on waiting time. Several past studies revealed that provider staff generally believe that waiting up to 40 minutes before being seen by a provider is acceptable. To the contrary, patients believe they should not have to wait longer than 15 minutes before being seen (Piper, 1990).

Ideally, a scheduling system should maximize the number of patients a provider sees in a specified period of time; it should minimize patient waiting without impairing the entire system (i.e., decrease staff efficiency); and the system should maximize the use of support staff (e.g., nurses, paraprofessionals, etc.) and examining rooms (Smith and Smith, 1984).

The PAT used brainstorming (see Appendix J) and a process flow chart to search for root causes of the problems encountered in patient flow. They looked at the work involved as a process, a collection of linear processes, one thing happening after another, with rate

limiting steps, choke points, time delays, and volume delays. The PAT was advised, by the Resident, that: 1. Although resources (i.e., people, equipment, supplies, information, and money) can alleviate problems, most problems are process driven, and 2. They should first look at fixing awkward, redundant and unnecessary steps, through thoughtful revision, for greatest impact.

After each meeting team members were asked to relay the information discussed to members of the OB-GYN Clinic staff, and to solicit ideas on how to improve the process relevant to delays patients encountered. Comments from staff members during weekly OB-GYN Clinic meetings indicated this exchange of information did not occur. Consequently, this lack of communications contributed to the OB-GYN staff's distrust of the PAT and skepticism toward the improvement process. Often changes made independent of the PAT, by OB-GYN Clinic managers, were attributed to the PAT (e.g., routine OB appointment shortened from 15 to 10 minutes).

After a series of meetings the PAT determined that having a medical records clerk tactically located in the clinic would alleviate much of the congestion at the front desk and in the screening room. The PAT took

into consideration the clinic's physical layout (see Figure 1.). By multi-voting on the various options available, they decided on the room next to the Dysplasia clinic as the best possible location for the clerk. This PAT recommendation to the Chief of the OB-GYN Service was subsequently approved and implemented.

This action precipitated a number of events. The Military Medical Records Specialist (71G) who had been slated to fill the position, went on emergency leave (never to return), after working in the clinic only a few days. The PAT then recommended creating a civilian overhire/temporary position. While waiting to obtain the overhire clerk, another suggestion was made to assign a 71G from another location into the Medical Records position temporarily. Unfortunately, the person detailed was an NCO from CSD. This maneuver frustrated the Branch Chief of CSD (a member of the PAT). Then new Head Nurse of the clinic (a member of the PAT) withdrew her support for the recommendation, stating that, "The timing was bad and her staff was being negatively affected by all the changes going on." The desire of other PAT members to implement the recommendation, combined with the Resident being motivated by a requirement for project completion, forced the change to be implemented anyway. This

action may be viewed by some as being counter to the "voluntary" principles of the TQM/CQI process.

The solution recommended by the PAT was to insert a medical records person into the patient flow process of the OB-GYN Clinic. By doing so, we expected to reduce the congestion at the front desk and in the screening room by having this person assume some of the duties being performed in both of those areas. Specifically, the medical records person would obtain the next day's OB records for scheduled appointments and prepare those records for distribution by completing a standard form (SF) 600 and pre-checking the record to ensure previously ordered lab slips were posted in the OB medical record. These medical records would then be ready for the receptionist to hand to the patient as soon as they arrived for their scheduled appointments. In addition, obtaining the previous day's records would allow the medical records clerk to scrutinize the record to determine if appropriate lab slips were available in the record, corresponding with the next day's follow-up appointments (i.e., 20, 30 and 40 week OB follow-up appointments). This prior check would save the provider time, by preventing unnecessary calls to the laboratory to search previously ordered laboratory results. The medical records clerk would

also assist patients in preparing CHAMPUS paperwork prior to seeing CHAMPUS providers and prepare ordered laboratory slips for patients leaving the providers after their appointment. These duties were previously accomplished by the screener. In addition, the PAT envisioned the medical records person eventually becoming a source of OB-GYN specific CHAMPUS (insurance) information, a subject matter expert, available to answer questions posed by patients and staff concerning CHAMPUS requirements.

As a result this change, the amount of work being done at the front desk was reduced. Congestion at the front desk was also reduced. The check-in process became smoother and more efficient; you no longer saw two lines of women ten deep, in various stages of pregnancy, waiting to be checked-in or to make a appointment. The receptionist and appointment booking clerk had more time to concentrate on providing information, answering phones and booking appointments. Consequently, more time and attention were given to patients. Comments on the post-survey therefore seemed more positive than on the pre-survey. For example, several post-survey comments expressed an increase in the quality of service being provided in the clinic as compared to last year. Additionally, some providers in

the clinic thought the records were more complete and organized. They were now required to make fewer calls to the laboratory in reference to missing laboratory results. The patient bottleneck in the screening room was reduced because many of the screeners responsibilities (e.g., CHAMPUS paperwork, lab slips, etc.) were shifted to the medical records clerk, thereby freeing the screener to concentrate on collecting patient vital signs and preparing the patient's record prior to their being seen by a provider.

#### Conclusions

Problem identification will determine the type of search conducted for an appropriate solution. The dictates of tautology, precedent and policy will determine the direction and limits of the search. In general, the search for a solution begins at the specific level of past precedent and may stop there if a satisfactory answer is found. In other words, the search proceeds on the tenet of conservation of organizational and individual energy. Old policies will be sharpened and redefined before attempts are made to change or develop new policy. In the search process one of the first lines of inquiry is directed

at the experience of other organizations with the same type of problem (Katz and Kahn, 1978, pp. 490-491). TQM/CQI is a paradox, it strives to break away from this mindset, yet its acceptance in the U.S. is the product of this type of thinking. This new paradigm promotes improvement even before there is a clearly defined problem. TQM/CQI is a never ending pursuit for perfection. However, obvious systems breakdowns must be fixed before they can be truly improved. If dysfunctional issues are not resolved first, employees at the operational level will soon become disenchanted due to failed expectations. TQM/CQI should not be seen as a panacea, which will remove all system problems once its ideals are conceptually embraced. Instead, it should be seen as a long range strategy to methodically cure systems ills.

Although the concept of implementing TQM/CQI principles at the working level will have some incremental benefits, the timing for its implementation at the operational level maybe flawed. TQM as a philosophy has not been totally embraced or implemented at higher levels of the U.S. Army's organizational structure, or the governmental regulatory agencies that monitor and control many of the managerial aspects of our day-to-day lives in the military.

The abundance of regulations, policies, and procedures in the U.S. Army are, for the most part, created by others, and beyond the direct control of those required to abide by them. The large volume of controls and requirements placed at the working level are often devised by political staffers who hold positions at echelons far above the reality of the affected working environment (e.g., requirements for epidurals and abortions overseas). These mandated missions requirements often run counter to the basic tenets of TQM/CQI. For example, one improvement idea was to install a new telephone system which included features such as: stacking calls, multiple hold buttons, an increased number of lines and additional access to outlying clinics for physicians. Presently physicians must go to one designated phone to call a military clinic outside the Frankfurt area. This improvement initiative has outlasted two Adjutants, has been ongoing since the Resident's arrival at the FMEDDAC and is still only "being considered".

One does not have to look far to find examples of this bureaucracy at higher levels; they are only exponentially more complex and costly. For example, the Composite Health Care System (CHCS) is a highly sophisticated medical information system which provides

automated, integrated support for the primary functions of military medical treatment facilities, both hospitals and clinics. CHCS was designed to support many of the information requirements of both providers and administrators to enhance the quantity and quality of care provided. However, this 1980s technology is still in the process of being installed, although it is dated and still has system "glitches". TQM/CQI endeavors must be top driven. This means not just conceptually and tacitly accepting the philosophy. It means actively fixing the system before confounding employees at the operational level with seemingly contradictory ideas, or pseudo-changes.

One needs to recognize that processes are not always clear cut. They do not conveniently stay within one homogeneous area. Organizations must be willing to improve their staff's negotiating skills and ensure communications across discipline and departmental lines, or they will continue to encounter barriers when introducing the principles of TQM/CQI.

Most people realize that paradigms affect how one sees things and responds to the environment. Yet, true advancement, true breakthrough, almost always requires one to see things differently in this regard. TQM/CQI can best be understood by defining its purpose: 1. To

continually improve our service to patients, 2. To our staff, and 3. To our organization.

Service chiefs certainly do not have to be paragons of TQM/CQI virtue, but they should be willing to be leaders, to step out in front, and champion some TQM/CQI endeavors. They should also recognize that they need a critical mass of TQM/CQI education. They must have trust in themselves and their staff, be willing to make mistakes, live through those mistakes, and be willing to institutionalize some TQM/CQI tools. In addition, they have to be willing to define work as processes and particularly to see the value of studying those processes by collecting data and involving the customer to improve processes. Lewin (1947) stressed that man must take part in his own re-education if he is to be re-educated at all; it is an active involvement rather than a passive process (Schaler, 1976).

Although inconclusive, the results of this study indicated that given time patient waiting time in the OB-GYN Clinic can be reduced by manipulating clinic conditions and processes. Additionally, it appeared that the perception of overall quality of care in the clinic improved as a result of some minor changes that actually occurred. Those positive changes cannot in

their entirety be attributed to the PAT's recommendations. Some of these improvements may be the result of the "Hawthorne Effect."

Simon (1947) described the "Hawthorne Effect" as the magnitude to which group attitudes of acceptance or resistance will condition the individual's reaction to authority. In 1924 researchers at the Hawthorne plant of the Western Electric Company sought to determine the relationship between certain physical changes in working conditions and employee output. Something happen in the Hawthorne plant which could not be explained by the experimentally controlled conditions of work. It appeared that the employees selected for the test were reacting to the experiment in the way in which they assumed that they were expected to respond (Schaler, 1976).

The benefit of this study lies in the value of the knowledge gained from the PAT's efforts. In their attempts to work together on process improvement, they succeeded in attaining a better understanding of the overall process, and an increased awareness of other group members' contributions, concerns and hardships. This knowledge improved communications among the groups.

The study's results were inconclusive. The time

log comparisons (before and after the change) indicated either slightly increased variability or no statistical difference, and the pre and post satisfaction surveys were similarly indeterminate. Subjectively, however, one could conclude from post survey comments that there was positive influence. In the fluid environment of this study (i.e., downsizing, personnel turnover, the summer shortage of providers and the negative decisions that inevitably result), the PAT was unable to have perfect knowledge about all variables having influence on their recommendation. The PAT in understanding the "delay in time in seeing the provider" problem/process was working with the variables as they understood them at that point in time. We were unable to factor in unpredictable variables (e.g., loss of a secretary or varying speeds of work between one who has had experience in the screening room versus a trainee, or the learning curves that would be encountered and the outcome of placing medical proficiency training (MPT) students in the process at a critical time in measuring before and after differences). We were also unable to predict the effect that the speeds different providers would work at would have on the actual measurements of difference. As some physicians departed or became unavailable for work and patients were shifted to other

providers, who were unaccustomed to the heavier workload, the process as the PAT knew it changed and the question became, "are these variations special cause or common cause?". The limitation of the Resident's project time requirements (i.e., ten months) would not allow these questions to be answered. However, if this project were seriously "adopted" or someone in the clinic took ownership of CQI, these variations (after being monitored for longer periods of time) could be better understood.

TQM/CQI is not a short term endeavor. Even at the operational level it requires commitment and ownership by the person or persons intimately accountable to the process. The PAT's efforts in the short-range had little measurable effect. However, in the long-term the recommendation could exhibit the positive results being pursued. None-the-less, the seed of TQM/CQI was planted and with more education, familiarization and commitment by leadership, I believe the clinic has begun its never-ending journey towards continuous quality improvement.

Although this study of the implementation of TQM/CQI in the FMEDDAC OB-GYN Clinic did not result in the successful outcomes originally envisioned, it is still a worthwhile study. Managers planning to

implement TQM/CQI in other analogous situations are likely to experience similar problems. A learned analysis of what doesn't work is sometimes more educational than a "description" of what did work.

#### **Recommendations**

The FMEDDAC OB-GYN Clinic staff must be more proactive in determining how best to improve their customer/supplier relationships, instead of waiting to respond to each problem or crisis as it arises. Different disciplines (physicians, nurses, administrators, etc.) must be willing to work together as co-equal members of a team. Roles and responsibilities of each team member must be clearly and realistically defined to prevent the tendency for "blame shifting" when particular improvement opportunities do not immediately render desired outcomes. There should be collaboration and agreement on the future state of the clinic. Agendas of the different groups involved need to be focused in pursuit of a common goal. Leadership within the OB-GYN Clinic must take an active role in enlightening these distinctly different groups with the knowledge of their own commonality and purpose.

The OB/GYN Clinic, as a cohesive team, must take

ownership of the continuous quality improvement process. The PAT's improvement ideas (as identified in their "brainstorming" sessions, see Appendix J) should be pursued. Specifically, their ideas for more innovative staffing schedules (e.g., same type of appointment on the same days to ensure efficiency of supplies and manpower, scheduling two physicians for walk-in/sick-call to be more proficient at controlling prescription refills, telephone consults, and walk-in overloads/overbooks; an area currently dreaded by the providers). In addition, the PAT recommended standardized, more timely exam room restocking, job books to reduce the learning curve required when training new personnel and standardized policies for adjusting appointments when providers do not show-up for some reason. The physical layout of the clinic and office assignments should be reassessed, with the goal of providing physicians with more than one exam room, thereby making them more efficient (i.e., the patient can be prepped in one room while the physician is treating another patient in the other exam room). All PAT ideas have potential for improving the clinic's overall productivity and their ability to effect internal and external customer satisfaction.

One promising area for improving customer

satisfaction is working with health care providers to improve staff utilization. A study by Jeppson (1989), found that there is considerable variation in the way physicians practice medicine. He also found that most physicians are anxious to learn from one another. They have healthy attitudes and are willing to examine productivity data about medical practice patterns. There is a lot to be gained from establishing productivity protocols that health care providers feel comfortable with, and will implement. Only through collaboration with health care providers can TQM/CQI initiatives that espouse productive health practices be established. One of the tools currently being recommended by health care CQI proponents is developing critical pathways for high volume, high cost and high risk procedures. Critical pathways would be useful in a clinic such as the FMEDDAC OB-GYN Clinic, because they standardize the procedures used by all physicians assigned to the clinic, rather than allowing each one to practice too independently (with some physicians spending more time and money than necessary on high cost or high volume procedures). Adopting this initiative would address both patient satisfaction issues of access and delay. Patient in the clinic could be more efficient, and providers could see more

patients, with shorter waiting times for each patient.

Total Quality Management is a philosophy and concept defining how people should work together in organizational settings. Health care institutions that succeed will understand TQM as a new paradigm of collaboration and focused team effort. The continuous improvement concept is actualized through the Shewhart-Deming-PDCA Cycle, which is the impetus that drives CQI. W. Edwards Deming's 14 points (see Appendix B) are an excellent starting point for health care organizations. Hospital leaders must view the TQM/CQI model with energy and optimism, but also with constructive circumspection. Painful, potentially costly, learning experiences await organizations that view TQM as "just another program" (Merry, 1989), or "management fad".

Members of health care organizations must understand TQM/CQI strategic objectives and improvement goals, as they relate to their areas of responsibility. The procedures and protocols that members use must be clearly defined, communicated, and understood. TQM/CQI is truly a senior management function. It involves redefining the organization's system for producing health care outcomes and changing the way management deals with physicians and all health care employees.

**The changes must be integrated with strategic planning.  
Significant cultural change will be required for most  
organizations.**

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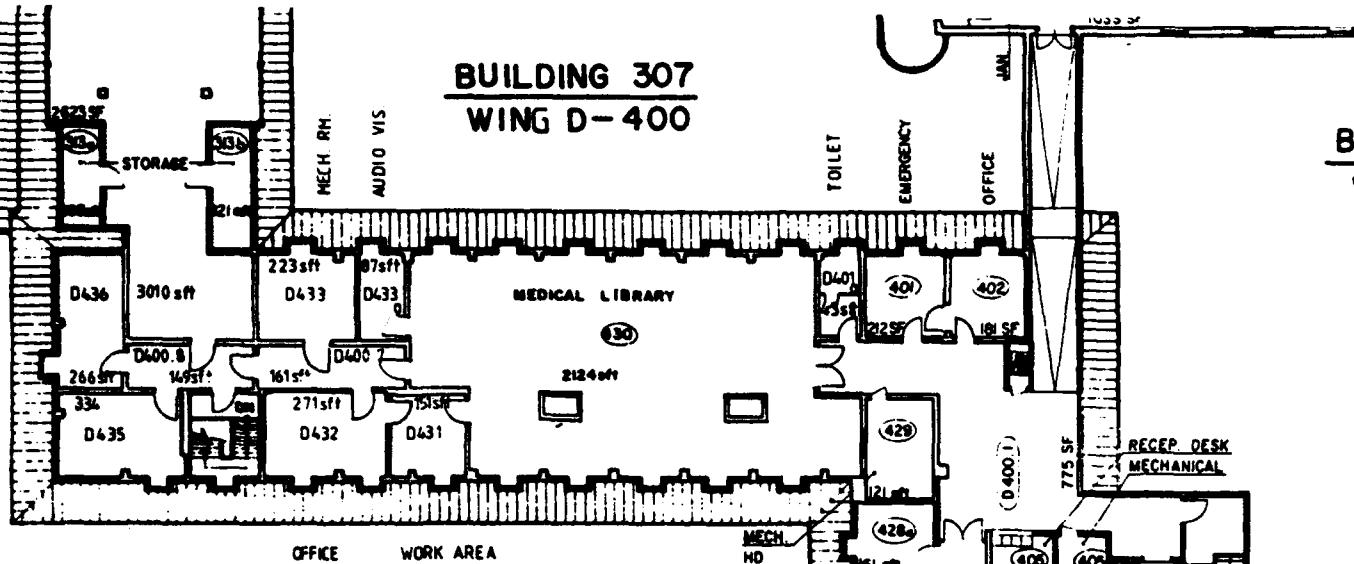
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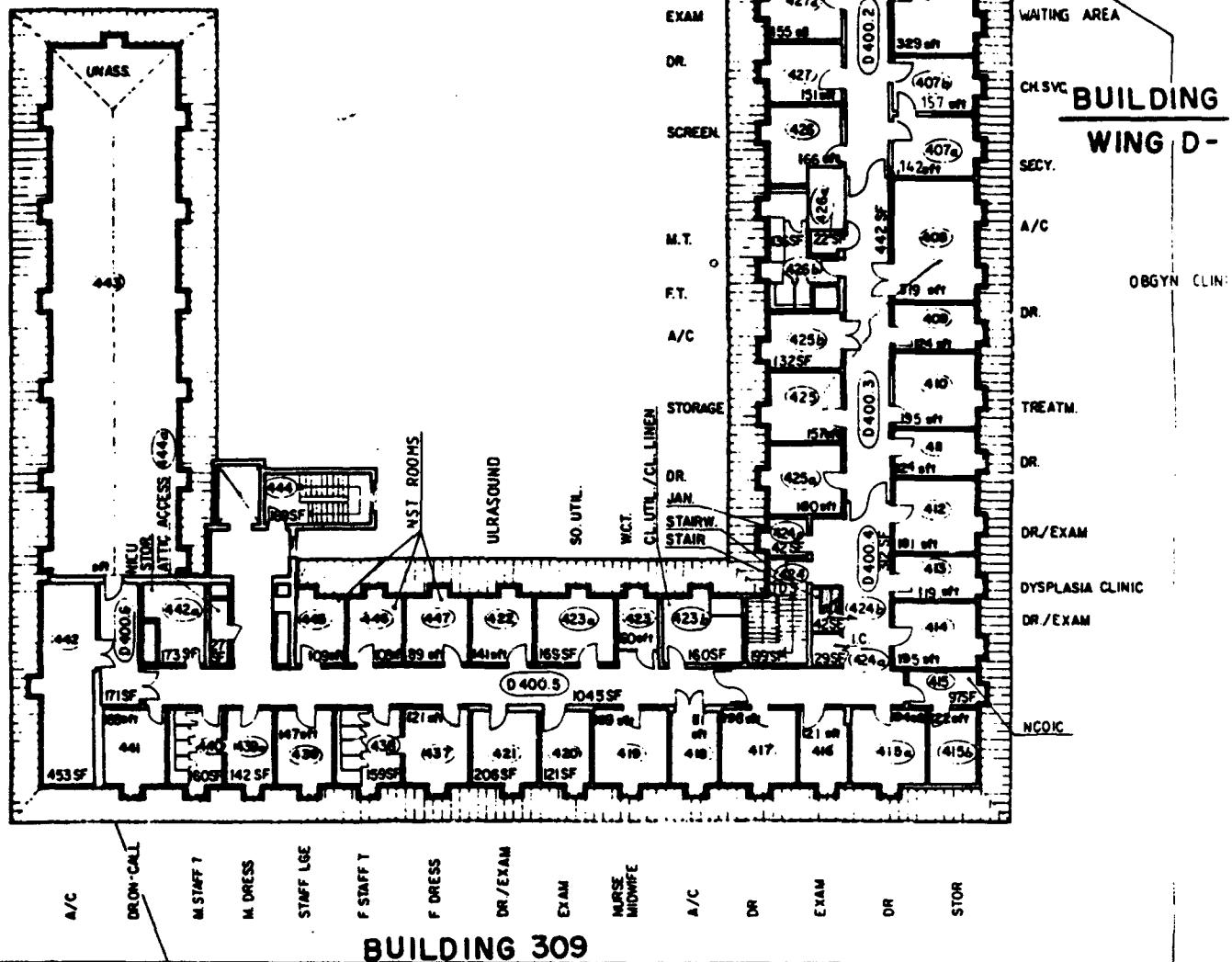
**Figure 1**

**Diagram for Work-place layout for OB-GYN Clinic**

BUILDING 307  
WING D-400



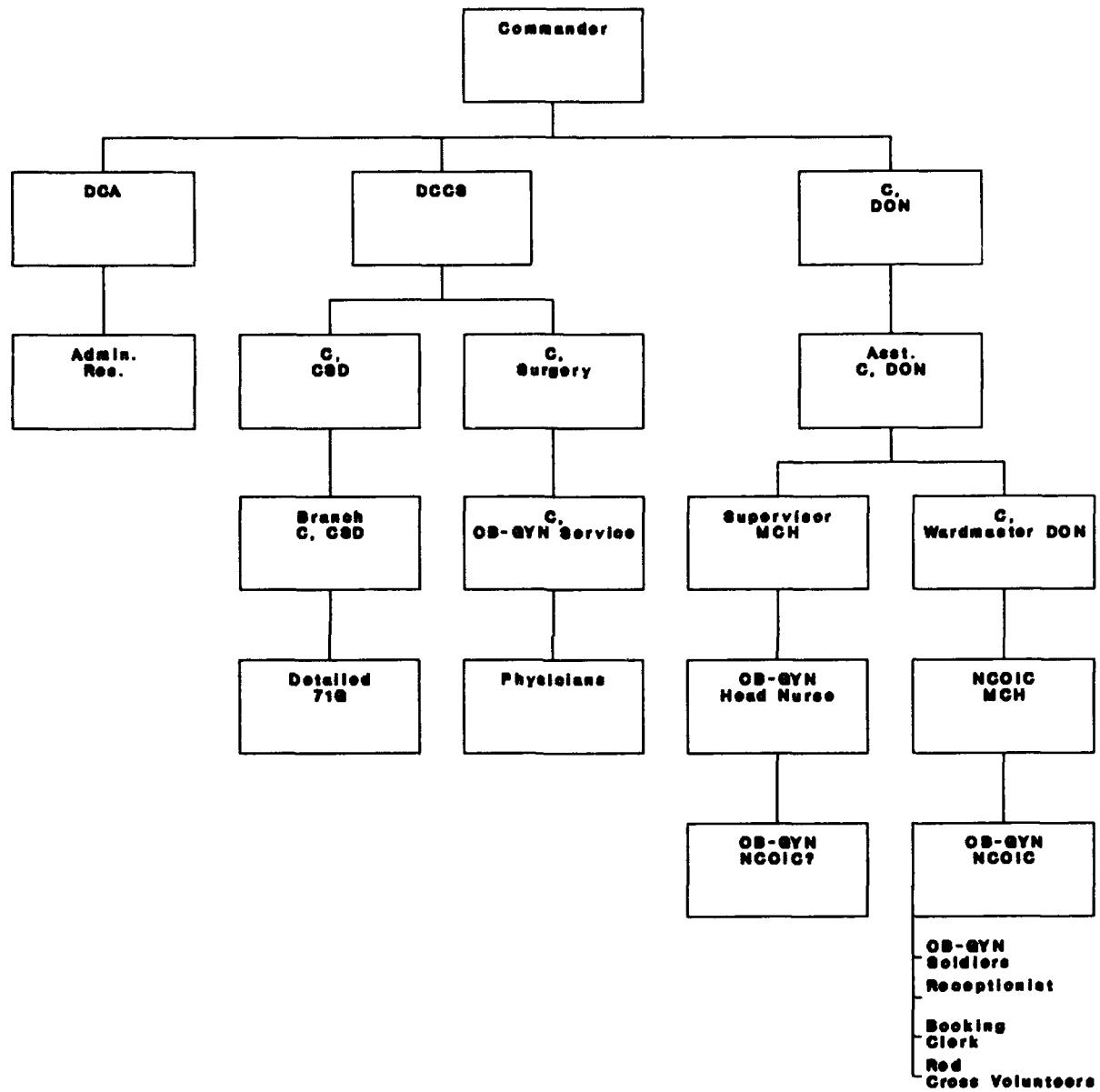
**BUILDING  
WING D -**



**Figure 2**

**Organizational Chart for the OB-GYN Clinic**

**FMEDDAC OB-GYN Clinic**  
(Vertical Lines of Authority)



**Appendix A**

**Operational Definitions**

**Administrative and/or Clerical and/or Logistics** - all personnel utilized at the facility but not involved in direct patient care.

**Advisor** - See Facilitator/Advisor

**Ambulatory Gynecology Clinic** - Function: The clinic examines, diagnoses, and treats diseases and injuries of the female reproductive system; performs such procedures as diagnostic suction curettage, culdoscopies, cryosurgery, tubal cautery, and insertion of intrauterine devices.

**Ambulatory Obstetrics Clinic** - Function: The clinic examines, diagnoses, and treats obstetrical patients; provides conferences for patients.

**Ambulatory Obstetrical and Gynecological Care** - Function: Provides diagnostic services, care, treatment, minor surgical procedures, and proper medical disposition of outpatients referred to the Family Practice Clinics, Gynecology Clinics, and

Obstetrics Clinics. Provides follow-up care for selected postoperative patients. It provides a comprehensive plan of care for patients, including monitoring and maintaining their state of health, counseling and guidance, health education, rehabilitation, and prevention of diseases; and provides clinical consultation services, medical care evaluation, professional training of assigned personnel, preparation and submission of reports and maintenance of medical records.

Authoritarian Culture - An organizational culture characterized by the holding of all power (Decision making and information) at the top of the organization. The authoritarian organization seeks to maintain the status quo and forces workers to conform, never question, or give feedback, play politics, and wait for orders.

Benefit - See Outcome

Boundary - The beginning or end point in the portion of a process from a Supplier to a Customer that will be the focus of the process improvement effort.

Brainstorming - A group decision making technique designed to generate a large number of creative ideas through an interactive process. Brainstorming is used to generate alternative ideas to be considered in making decisions.

Cause and Effect Diagram - See Ishikawa Diagram

Coach - A key resource person from within the hospital who will support the Commander's leadership of TQM/CQI. A respected peer from the hospital work force who is enthusiastic and knowledgeable about TQM/CQI, eager to learn, and eager to help others learn.

Clinician - A physician or dentist practitioner (including interns and residents).

Collaborative Culture - An organizational culture characterized by a shared vision, shared leadership, empowered employees, cooperation among organizational units as they work to improve processes, a high degree of openness to feedback and data, and optimization of the organizational whole versus its many parts.

Common Cause System of Variation - The collection of

variables that produce common cause variation and the interaction of those variables.

Common Cause Variation - Variation is a process that is due to the process itself and is produced by interaction of variables of that process.

Control Chart - A display of data in the order that they occur with statistically determined upper and lower limits of expected common cause variation. It is used to indicate special causes of process variation, to monitor a process for maintenance, and to determine if process changes have had the desired effect. One of the basic tools of CQI.

Control Limits - Expected limits of common cause variation. Sometimes they are referred to as upper and lower control limits. They are not specification or tolerance limits.

CQI Technology Tools - A group of techniques and charts used to collect, organize, display, and evaluate knowledge about a process. Specifically, Brainstorming, Flowchart, Cause and Effect Chart, Check Sheet, Pareto Chart, Run Chart, and Control Chart are

examples of these tools.

Customer - The receiver of an output of a process, either internal or external to a hospital or corporate unit. A customer could be a person, a department, a company, etc.

Data Collection - Gathering facts on how a process works and/or how a process is working from the customer's point of view. All data collection is driven by knowledge of the process and guided by statistical principles.

Deming Cycle for Continuous Improvement - A visualization of the TQM/CQI process usually consisting of four points - Plan, Do, Check, Act. The cycle was first developed by Dr. Walter A. Shewhart but was popularized in Japan in the 1950s by Dr. W. Edwards Deming.

Deming's 14 Principles - The foundation upon which TQM is built. The points are a blend of leadership, management theory, and statistical concepts which highlight the responsibilities of management while enhancing the capacities of employees (see Appendix B).

Direct Care Paraprofessionals - Individuals, other than clinicians, direct care professionals, and registered nurses, skilled to provide technical assistance in direct patient care (e.g., licensed practical nurses and "91C" military medical specialists).

Direct Care Professionals - Individuals, other than clinicians, licensed or certified to deliver health care. They consult with other health care professionals to assess, plan, and implement an effective treatment program (e.g., physician assistants, nurse practitioners and nurse midwives).

Facilitator/Advisor - A person who has developed a special expertise in the quality improvement process. In a quality improvement team, the facilitator/advisor is not a team member but a person outside the group who serves as a process guide, teacher of QI methods, and consultant to the team leader, and who helps connect the work of the team to the hospital's overall quality improvement effort.

Flowchart - A graphic representation of the flow of a process. A useful way to examine how various steps in a process relate to each other, to define the

boundaries of the process, to identify customer/supplier relationships in a process, to verify or form the appropriate team, to create common understanding of the process flow, to determine the current "best method" of performing the process, and to identify redundancy, unnecessary complexity and inefficiency in a process. One of the basic tools of CQI.

FOCUS-PDCA - A strategy that provides a roadmap for continuous process improvement when linked to a quality definition. It is an acronym meaning: Find a process to improve, Organize a team that knows the process, Clarify current knowledge of the process, Understand sources of process variation, Select the process improvement, Plan the improvement and continued data collection, Do the improvement, data collection, and analysis, Check and study the results, Act to hold the gain and to continue to improve the process.

Force Field Analysis - A systematic method for understanding competing forces that increase or decrease the likelihood of successfully implementing change.

Future State - In an organizational transformation, the

vision of where the organization will be after it is transformed. For the transformation to CQI, the future state includes constancy of purpose, leaders who model the new way, collaboration, customer mindedness, and a process focus.

Gynecology - The study of diseases and conditions of the female generative tract.

Immediate Customer - The person or unit that directly receives the output of the process.

Inpatient Obstetrical and Gynecological Care -  
Function: Provides specialized inpatient care, treatment, and consultative evaluation. Coordinates health care delivery relative to the examination, diagnosis, treatment, and appropriate disposition of eligible patients; prepares medical records; and submits required reports. The organization of the OB/GYN function may vary according to patient load, staffing and facilities. Each of the specialty care areas provides the specialized techniques and practices related to those specialty areas by using all available modern diagnostic procedures, studies, and therapy.

Input - The service or product a supplier provides to a

process. Inputs to one process are the outputs from preceding processes.

Ishikawa Diagram - A graphic tool used to explore and display all the factors that may influence or cause a given outcome. One of the basic tools of the New Quality Technology. (Also known as a cause and effect or fishbone diagram.)

Key Process Variable - A component of the process that has a cause and effect relationship of sufficient magnitude with the Key Quality Characteristic such that manipulation and control of the KPV will reduce variation of the KQC and/or change its level.

Key Quality Characteristics - The most important quality characteristics. KQCs must be operationally defined by combining knowledge of the customer with knowledge of the process. KQCs are measured to understand the actual performance of the process.

Median - In a series of numbers, the median is a number which has at least half the values greater than or equal to it and at least half of them less than or equal to it.

Meeting Process - A defined method for conducting meetings that includes specific rules and responsibilities for a team leader, a recorder, a timekeeper, team members, and a facilitator or advisor. The steps are 1) Clarify the objective, 2) Review roles, 3) Review the agenda, 4) Work through agenda items, 5) Review the meeting record, 6) Plan the next agenda and methods, and 7) Evaluate.

Mentor - A highly skilled TQM/CQI professional with extensive training and experience in the initiation and operation of the Hospital-wide Quality Improvement Process. A resource person from outside the hospital or department who visits periodically to counsel the CEO, Coach and Quality Council in the initiation of the TQM/CQI.

Nominal Group Technique - A group process technique designed to efficiently generate a large number of ideas through input from individual group members.

Non-availability Statement (NAS) - A certification by a commander (or a designee) of a military medical treatment facility (MTF), and recorded on DD Form 1251, Uniformed Services Medical Facility Non-availability

Statement (NAS), generally issued because the medical care that a Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) beneficiary needs cannot be provided at the facility concerned.

Obstetrics - That branch of medicine concerned with the reproductive performance of the female.

Operational Definition - A description in quantifiable terms of what to measure and the steps to follow to measure it consistently. Deming has suggested that a good operational definition includes: 1) a criterion to be applied, 2) a way to determine whether the criterion is satisfied, and 3) a way to interpret the results of the test. An operational definition is developed for each process variable before data is collected.

Opportunity Statement - A concise description of a process in need of improvement, its boundaries, and the general area of concern where a quality improvement team should begin its efforts.

Outcome (Benefit) - The degree to which Outputs meet the needs and expectations of the Customer.

Output - The service or product that a customer receives from a process. The output of one process can be the input to a succeeding process.

Owner - The person who has or is given the responsibility and authority to lead the continuing improvement of a process. Process ownership is a designation made by leaders of organizations and depends on the boundaries of the process.

Paradigm Shift - A point in time when the knowledge or structure which underlies a science or discipline changes in such a fundamental way that the beliefs and behavior of the people involved in the science or discipline are changed. Many people feel a major paradigm shift is underway today in the healthcare field as the traditions of samaritanism and science begin to include social accountability.

Pareto Chart - A bar graph used to arrange information in such a way that priorities for process improvement can be established. It displays the relative importance of data and is used to direct efforts to the biggest improvement opportunity by highlighting the vital few in contrast to the many others. One of the

basic tools of CQI.

Present State - In a force field analysis, the description of an organization as it currently exists. It includes what happens in the organization, both formally and informally.

Process - A series of actions which repeatedly come together to transform inputs into outputs.

Process Action Team (PAT) - A specially constituted group, usually five to eight people, chosen to address a specific opportunity for improvement. Consists of those people who have regular contact with the process.

Process Improvement - The continuous endeavor to learn about all aspects of a process and to use this knowledge to change the process to reduce variation and complexity and to improve customer judgments of quality. Process improvement begins by understanding how customers judge quality, how processes work, and how understanding the variation in those processes can lead to wise management action.

Process Owner - See Owner.

Process Variation - The spread of process output over time. There is variation in every process, and all variation is caused. The causes are of two types -- special or common. A process can have both types of variation at the same time or only common cause variation. The management action necessary to improve the process is very different in each situation.

Quality Assurance - A term with two definitions. In traditional healthcare circles, it is the process established to meet external regulatory requirements, including those of the Joint Commission on Accreditation of Healthcare Organizations, and to assure that patient care is consistent with established standards. It also supports the medical staff credentialing procedures. In modern quality terms, quality assurance means designing a product or service so well that quality is inevitable.

Quality Characteristics - Characteristics of the output of a process that are important to the customer. The identification of quality characteristics requires knowledge of the customer needs and expectations.

Quality Council (QC) - A group composed of the Coach

and the senior leadership of an organization which is primarily responsible for planning, strategy development, deployment, monitoring, educating, and promoting the quality improvement process.

Registered Nurses - All registered nurses except those who are being utilized as nurse practitioners, nurse anesthetists, and nurse midwives, which are accounted for in the direct care professionals category.

Rework - The act of doing something again because it was not done right the first time. It can occur for a variety of reasons, including insufficient planning, failure of a customer to specify the needed input, and failure of a supplier to provide a consistently high quality output.

Run - A point or a consecutive number of points that are above or below the central line in a run chart. Too long or too many or too few runs can be evidence of the existence of special causes of variation.

Run Chart - A display of data in the order that they occur. Run charts display process variation and can be used to indicate special causes of process variation in

the form of trends, shifts, or other non-random patterns.

Seven-Step Meeting Process - See Meeting Process.

Shewhart Cycle - See Deming Cycle for Continuous Improvement.

Special Cause Variation - Variation in the process that is assignable to a specific cause or causes. It arises because of special circumstances.

Special and Common Cause System of Variation - The collection of variables that produce both common cause variation and special cause variation and the interaction of those variables.

Special Cause Variation - Variation in process that is assignable to a specific cause or causes. It arises because of special circumstances.

Sponsor - A member of the organizational leadership who serves as an advocate or champion for a process improvement, assists in securing resources, and gives guidance to the effort.

Statistical Thinking for Process Improvement - A data-driven method for decision making based primarily on an understanding of process variation. It results in wise management actions which contribute to the continuous improvement of quality.

Supplier - The party or entity responsible for an input to a process. A supplier could be a person, a department, a company, a nursing school, etc.

Systems of Variation - See Common Cause System of Variation and Special and Common Cause System of Variation.

Tampering - Taking action without taking into account the difference between special and common cause variation.

Team Leader - A person designated to lead the Process Action Team. An individual who has team leadership skills and basic quality improvement skills.

Teams:

Cross-functional - A group of usually five to eight people from two or more areas of the hospital who are

addressing an issue which impacts the operations of each area. For example, the processes of distributing laboratory results might be addressed by a team involving lab, nursing, and medical staff.

**Functional** - A group of five to eight people addressing an issue where any recommended changes would not be likely to affect people outside the specific area. For example, a Functional Team concerned with filing and retrieving data in the laboratory might consist just of people who work in the lab.

**Tools** - See CQI Technology Tools.

**Transformation** - A major organizational change from the present state to a new/preferred state in which the CQI flourishes. The primary steps involved in moving an organization through a transformation are present state, unfreezing, transition period, refreezing, and new/ preferred state.

**Transition Period** - A description of the time when an organization is visibly moving away from the old way toward the new way. During this time, employee attitudes and behaviors range from being excited and

busy to being confused and resistant. The support for change is building. New leaders emerge, champions of the change come forward, and confusion over roles begins to clear.

Ultimate Customer - The person or unit who receives the output from a series of processes and for whom these processes are designed. Without the ultimate customer, there would be no need for the intermediate processes to exist.

Unfreezing - Reassessing old values and behaviors and becoming open to the acceptance of a new culture.

Variation - See Process Variation.

Work Center - A discrete function or subdivision of an organization for which provision is made to accumulate and measure its expense and determine its workload performance.

(Sources MEPERS Glossary and Wright-Patterson AFB Medical Medical Center's Q101 TQM Course)

**Appendix B**

**Transformation Through Application of Deming's  
Fourteen Points**

1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.
2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
6. Institute training on the job.

7. Institute leadership. The aim of leadership should be to help people and machines and gadgets to do a better job. Leadership of management is in need of overhaul, as well as leadership of production workers.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
11. (a) Eliminate work standards (quotas) on the factory floor. Substitute leadership. (b) Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.

12. (a) Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality. (b) Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, *inter alia*, abolishment of the annual or merit rating and of management by objective.

13. Institute a vigorous program of education and self improvement.

14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job.

(Source Deming, 1989)

**Appendix C:**

**OB-GYN Total Quality Management (TQM) Pre-Survey and Results**

## OB/GYN Total Quality Management (TQM) Survey

### Rating Scale:

- 1. Strongly Disagree
- 2. Disagree
- 3. Not Sure
- 4. Agree
- 5. Strongly Agree

### ATTITUDE and MORALE

#### Rating

- 1. I like my supervisor.
- 2. I am treated fairly by my immediate supervisor.
- 3. My immediate supervisor is receptive to my suggestions.
- 4. My co-workers are treated fairly by their supervisors.
- 5. A spirit of cooperation exists in my section.
- 6. My branch has good relationships with all others in my unit.
- 7. My unit has good relationships with all others on the hospital.
- 8. I am happy with my job.
- 9. Our unit gives us enough time to perform our duties in a professional manner.
- 10. My unit has enough people to accomplish our mission.
- 11. My unit cares about the people we serve.
- 12. I am proud to be a member of my unit.

### TQM INVOLVEMENT

- 13. I understand the principles of TQM/CQI.
- 14. My workcenter applies TQM/CQI training to improve our services.
- 15. I believe TQM/CQI is relevant to my job.
  
- 16. If I were in charge, I would try to promote TQM/CQI.

EXAMPLES: BRANCH-Nursing, Physician, Administrative etc.

UNIT-Department of Surgery etc.

SECTION-OB/GYN Clinic, Labor and Delivery etc.

WORKCENTER-Triage Area, Reception Area, etc.

List problems you would like to see changed.

A baseline survey was conducted with the in-house staff which revealed the following concerns:

* Questions:	Ratings:				
	1	2	3	4	5
1.	0	1	0	4	8 Supervisor
2.	0	0	1	3	9
3.	0	0	1	5	7 L=2 H=5 score=4.5
4.	0	0	1	5	7 Supervisor
5.	0	3	0	7	3 Cooperation
6.	0	0	4	8	1 L=2 H=5 score=3.6
7.	1	2	4	5	1 Cooperation
8.	1	3	0	6	3 Environment
9.	4	4	2	2	1
10.	5	7	0	0	1 L=1 H=5 score=3.0
11.	1	1	2	4	5
12.	1	3	1	5	3 Environment
13.	0	1	7	5	0 TQM/CQI knowledge
14.	1	3	3	3	
15.	0	0	3	9	1 L=1 H=5 score=3.6
16.	0	0	4	7	2

\* See attached survey

COMMENTS/PROBLEMS:

1. Increase number support staff - chaperons and administrative support personnel (record keeping, filing, lab, reception, secretary, booking, check-in, chart organization, patient relations). - 10 responses
2. Improve communications - regular meetings (combined w/nursing staff & MDs) - 2 responses
3. Need for firm leadership - (buck stops here, ability to decide, implementation of services, control over all staff) - 1 response
4. Need more nursing staff - 3 responses
5. Need more paraprofessional help in clinic - 3 responses
6. Need better patient access (the current system is confusing) - 2 responses
7. There are too many patient care requirements (which results in a decrease in hours to provide patient care). - 1 response
8. Need to streamline documentation process. - 1 response.

9. Record keeping is in poor condition. records not kept all in same place (patients live in diverse areas). - 1 response
10. There are continuous shortages of supplies and inadequate equipment-2 responses
11. There is a lack of radiology and laboratory support - 1 response
12. There is poor morale - 1 response
13. There is poor accountability - 1 response
14. There is no recognition of quality patient care provided by command.  
- 1 response
15. There is no administration time to address management problems or do clerical work. - 3
16. Need to improve ability for follow-up - 1
17. Need to improve conditions in walk-in clinic to eliminate cattle herding. - 1 response
18. Increase the number of MDs - 1 response
19. Create a liaison between patients and DCCS's office to avoid "quick fix" to unavoidable problems. - 1 response
20. The staff is affected by - commitments outside hospital (SGT's time, ranges-pt test & daily pt, NCODP) - 1 response
21. decrease work load - 1 response

An interview with a staff member revealed a need to establish: 1. clinic patient procedures, a patient information booklet, and a patient education program; 2. triage responsibility (RN versus MD. versus CNM, who is responsible?); 3. who is responsible for telling the patient she is pregnant, who does basic assessments for bladder and yeast infections; 4. who checks on logistics, maintenance and new equipment orders.

During the months, January-June 1992, the main concerns for patients were the lack of PAP smears and gynecological follow-up appointments, a trend which peaked in May and June (oddly enough, the Well Woman Day, at the end of May, had little impact; complaints actually increased slightly during the month. Dysplasia and Follow-up appointments were in demand and the

Patient Representative did not notice a leveling off period until July and August).

The Patient Representative also stated that the most common patient complaints during the last few months were rudeness, shortness and being placed on terminal hold or disconnected by those in the clinic who were answering the phone. In addition, patients had difficulty in obtaining Dysplasia appointments, the PAP smear result notification procedure (CIN I II III) cause patients undue stress, and the lack of policy on priority of care cause active patient concerns.

**OB/GYN Process Action Team---Process: Patient Flow**

**Proposed Team Members:**

Administrative Resident  
OB/GYN Physician  
Nurse Midwife  
Nurse (Non-provider)  
Clinic NCOIC  
Patient Representative  
Civilian Receptionist/Clerk  
PAD Representative (CHAMPUS or O/P Records)  
CSD Representative

**Appendix D**

**OB-GYN Total Quality Management (TQM) Post-Survey and Results**

## OB/GYN Total Quality Management (TQM) Follow-up Survey

### Rating Scale:

- 1. Strongly Disagree
- 2. Disagree
- 3. Not Sure
- 4. Agree
- 5. Strongly Agree

### ATTITUDE and MORALE

#### Rating

- 1. I like my supervisor.
- 2. I am treated fairly by my immediate supervisor.
- 3. My immediate supervisor is receptive to my suggestions
- 4. My co-workers are treated fairly by their supervisors.
- 5. A spirit of cooperation exists in my section.
- 6. My branch has good relationships with all others in my unit.
- 7. My unit has good relationships with all others on the hospital.
- 8. I am happy with my job.
- 9. Our unit gives us enough time to perform our duties in a professional manner.
- 10. My unit has enough people to accomplish our mission.
- 11. My unit cares about the people we serve.
- 12. I am proud to be a member of my unit.

### TQM INVOLVEMENT

- 13. I understand the principles of TQM/CQI.
- 14. My workcenter applies TQM/CQI training to improve our services.
- 15. I believe TQM/CQI is relevant to my job.
- 16. If I were in charge, I would try to promote TQM/CQI.

**EXAMPLES:** BRANCH-Nursing, Physician, Administrative etc.  
UNIT-Department of Surgery etc.  
SECTION-OB/GYN Clinic, Labor and Delivery etc.  
WORKCENTER-Triage Area, Reception Area, etc.

List problems you would like to see changed.

A follow-up survey was conducted with the in-house staff which revealed the following concerns:

* Questions:	Ratings:				
	1	2	3	4	5
1.	0	0	0	8	7 Supervisor
2.	0	0	0	7	8
3.	0	0	1	8	6 L=1 H=5 score=4.3
4.	1	0	2	7	5 Supervisor
5.	0	2	3	6	4 Cooperation
6.	1	1	5	7	1 L=1 H=5 score=3.6
7.	1	0	2	11	1 Cooperation
8.	2	2	2	6	3 Environment
9.**	3	3	1	5	2
10.	6	2	1	5	1 L=1 H=5 score=3.4
11.	0	1	0	8	6
12.	0	2	1	8	4 Environment
13.	1	1	3	7	3 TQM/CQI knowledge
14.	0	3	2	8	2
15.	1	0	5	6	3 L=1 H=5 score=3.7
16.	0	1	3	9	2

\* See attached survey

\*\* One of the 15 surveyees who responded did not answer this question.

#### COMMENTS/PROBLEMS:

1. The implementation of TQM does much to focus the division on avenues of improvement and improves communication. It is however, not an effective tool for changing the larger on-going problems that this division faces of an overworked system which simply cannot do its complete mission without better personnel (i.e. more) and equipment resources.
2. Physicians seem to have little or no say in scheduling conflicts - patients just "arrive" on our doorstep and all are expected to see any and all comers, making us feel like indentured servants. Often we are not consulted regarding scheduling conflicts which involve us.
3. TQM is only relevant to discuss in an arena where all parts of the system are functional. It seems punitive to discuss TQM in an environment where there is little or no clerical/pharmacy/supply/radiology support. It's all well and good to treat the patient like a valued customer, but, for example, can't get their ultrasound result (phone's always busy), can't schedule them for surgery (no time or space in OR), can't get them medication (not enough in pharmacy or pharmacy is closed), and can't follow them up (no appt.), it seems a bit cynical to suggest they're a valued customer - To whom?

4. More doctors
5. Division of OB-GYN needs a new chief (receptive but, unmotivated and ineffective), and we desparately need more clinic personnel!!
6. I am unsure of where the system is broken at this point.
7. Doctors should be given all results of patients, especially PAPs in my care. My job efficiency is impossible to assess without these.

**Appendix E**

**Outpatient Satisfaction Questionnaire**

### OUTPATIENT SATISFACTION SURVEY

Your candid responses to the following questions are an important part of helping Frankfurt MEDDAC OB/GYN Clinic to improve services to our patients. Our goal is to provide quality services to our patients and their families. Your help will keep us on the right track. Please take the time to fill out this brief survey. Your responses will be treated as confidential.

---

I. DATE SURVEY COMPLETED: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
Month Day Year

Please Check Appropriate Responses:

II. YOUR VISIT TODAY: Appointment \_\_\_\_\_, Walk-in \_\_\_\_\_ or Consult \_\_\_\_\_

Obstetrical (Pregnancy) \_\_\_\_\_ or Gynecology \_\_\_\_\_

III. FIRST CLINIC VISIT:

Yes \_\_\_\_\_

No \_\_\_\_\_

Approximate number of previous clinic visits:

Less than 5 \_\_\_\_\_ 6-10 \_\_\_\_\_ 10-20 \_\_\_\_\_ More \_\_\_\_\_  
Over what period of time? \_\_\_\_\_ Years \_\_\_\_\_ Months \_\_\_\_\_

IV. WHICH CATEGORY BEST DESCRIBES YOU:

.Active Duty \_\_\_\_\_ .Active Duty Family Member \_\_\_\_\_  
.Retiree \_\_\_\_\_ .Retiree Family Member \_\_\_\_\_  
.Civilian Employee \_\_\_\_\_ .Civilian Emergency \_\_\_\_\_

V. Age: \_\_\_\_\_

VI. RACIAL BACKGROUND: White \_\_\_\_\_ Black \_\_\_\_\_ Hispanic \_\_\_\_\_  
Asian \_\_\_\_\_ Other \_\_\_\_\_

VII. WHICH CATEGORY BEST DESCRIBES YOUR CURRENT MARITAL STATUS:

.Married \_\_\_\_\_ .Divorced \_\_\_\_\_ .Single/never been married \_\_\_\_\_  
.Separated \_\_\_\_\_ .Widowed \_\_\_\_\_

VIII. DO YOU HAVE CHILDREN? Yes \_\_\_\_\_ No \_\_\_\_\_  
.Children's ages (oldest to youngest) \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_;

IX. MY FAMILY RESIDES: GOV'T Qtrs \_\_\_\_\_ Economy Qtrs \_\_\_\_\_

X. I TRAVEL (CHECK RESPONSE BELOW) MILES TO RECEIVE  
OUTPATIENT CARE AT THE OB-GYN CLINIC:

1-10 \_\_\_\_\_ 11-20 \_\_\_\_\_ 21-30 \_\_\_\_\_ 31-40 \_\_\_\_\_ Greater than 40 \_\_\_\_\_

---

Thinking about your medical care, indicate your response by circling the number that best describes your feeling about our service. Indicate not applicable (NA) with a check mark.

(Circle One Number for Each Response)

NA	Poor	Fair	Good	Very Good	Excellent
----	------	------	------	-----------	-----------

1. Clinic hours of operation? \_\_\_\_\_ 1 2 3 4 5

2. Patient information on  
Clinic services? \_\_\_\_\_ 1 2 3 4 5

3. Access to Clinic by the  
appointment system (ease  
of getting an appointment)? \_\_\_\_\_ 1 2 3 4 5

(Continued on back side)

	NA	Poor	Fair	Good	Very Good	Excellent
--	----	------	------	------	-----------	-----------

4. Service/courtesy of the appointment desk clerk:						
a) In the Clinic?	—	1	2	3	4	5
b) Over the telephone?	—	1	2	3	4	5
5. Receptionist service/courtesy?	—	1	2	3	4	5
6. Clinic cleanliness?	—	1	2	3	4	5
a) Appearance of waiting area?	—	1	2	3	4	5
b) Appearance of treatment room?	—	1	2	3	4	5
7. Availability of outpatient medical record?	—	1	2	3	4	5
8. Waiting time before seeing Provider (Explanation of delay [if any])?	—	1	2	3	4	5
9. Staff concern for your privacy (Confidentiality)?	—	1	2	3	4	5
10. Staff sensitivity to inconvenience of your condition or illness?	—	1	2	3	4	5
11. Display of directional signs?	—	1	2	3	4	5
12. Movement from station (Triage, vital signs etc.) to station within the Clinic during your visit?	—	1	2	3	4	5
13. Attention shown to me by medical/nursing staff (service/courtesy)?	—	1	2	3	4	5
14. Explanation of procedures and tests by:						
a) Staff?	—	1	2	3	4	5
b) Doctor?	—	1	2	3	4	5
c) Midwife?	—	1	2	3	4	5
15. Doctor/Midwife (Provider) to patient relationship experienced (their concern for you)?	—	1	2	3	4	5
16. Overall quality of care?	—	1	2	3	4	5

**COMMENTS:**

1. What is the most inconvenient aspect of the Clinic's current operating procedure? How would you change it?
2. Do you have any other suggestions that would improve our services?

**THANK YOU!!!**

**Appendix F:**

**Descriptive Statistics**

## ----- DESCRIPTIVE STATISTICS -----

HEADER DATA FOR: B:OB-GYN2    LABEL: OB-GYN OUTPATIENT SATISFACTION SURVEY  
 NUMBER OF CASES: 333    NUMBER OF VARIABLES: 61

## OB-GYN OUTPATIENT SATISFACTION PRE-SURVEY (PRIOR TO CHANGE)

NO.	NAME	N	MEAN	STD. DEV.	MINIMUM	MAXIMUM
1	DATE	326	195.9018	.35.9126	108.0000	325.0000
2	APPOINT	313	.8275	.3784	.0000	1.0000
3	WALK-IN	312	.1346	.3419	.0000	1.0000
4	OB	293	.6280	.4842	.0000	1.0000
5	GYN	294	.3707	.4838	.0000	1.0000
6	1ST APPT	328	.2134	.4103	.0000	1.0000
7	<5 APPT	323	.3808	.4863	.0000	1.0000
8	6-10 APP	323	.2322	.4229	.0000	1.0000
9	10-20 AP	323	.1300	.3369	.0000	1.0000
10	MORE	323	.0402	.1968	.0000	1.0000
11	PERIOD	204	.7168	1.0814	.0000	8.0000
12	ACTIVE D	329	.2705	.4449	.0000	1.0000
13	ACT FM	329	.6900	.4632	.0000	1.0000
14	RETIREE	329	.0030	.0551	.0000	1.0000
15	RET FM	329	.0122	.1098	.0000	1.0000
16	CIV EMP	329	.0243	.1543	.0000	1.0000
17	CIV EMER	329	.0000	.0000	.0000	.0000
18	AGE	316	27.5570	6.9419	15.0000	54.0000
19	WHITE	323	.6161	.4871	.0000	1.0000
20	BLACK	323	.2570	.4376	.0000	1.0000
21	HISPANIC	323	.0681	.2523	.0000	1.0000
22	ASIAN	323	.0279	.1648	.0000	1.0000
23	OTHER	323	.0279	.1648	.0000	1.0000
24	SINGLE	330	.0758	.2650	.0000	1.0000
25	SEPARATE	330	.0182	.1338	.0000	1.0000
26	WIDOWED	330	.0000	.0000	.0000	.0000
27	MARRIED	330	.8697	.3371	.0000	1.0000
28	DIVORCED	330	.0394	.1948	.0000	1.0000
29	CHILREN	331	.6133	.4877	.0000	1.0000
30	# OF CHI	329	1.0578	1.0819	.0000	5.0000
31	QTRS	320	.7812	.4140	.0000	1.0000
32	ECONOMY	320	.2188	.4140	.0000	1.0000
33	1-10	324	.4228	.4948	.0000	1.0000
34	11-20	324	.1698	.3760	.0000	1.0000
35	21-30	324	.2130	.4100	.0000	1.0000
36	31-40	324	.1204	.3259	.0000	1.0000
37	> 40	324	.0741	.2623	.0000	1.0000
38	Q 1	324	3.5710	.8716	1.0000	5.0000
39	Q 2	316	3.3354	.9831	1.0000	5.0000
40	Q 3	322	2.8820	1.3666	1.0000	5.0000
41	Q 4a	313	3.8914	.9273	1.0000	5.0000
42	Q 4b	281	3.7153	1.0909	1.0000	5.0000
43	Q 5	311	3.9228	.9540	1.0000	5.0000
44	Q 6	295	4.1593	.7814	2.0000	5.0000
45	Q 6a	300	4.0833	.7949	2.0000	5.0000
46	Q 6b	281	4.0285	.8614	1.0000	5.0000
47	Q 7	243	3.7160	.9863	1.0000	5.0000
48	Q 8	302	3.0728	1.1874	1.0000	5.0000
49	Q 9	283	3.7845	.8989	1.0000	5.0000
50	Q 10	260	3.5846	1.0344	1.0000	5.0000
51	Q 11	291	3.3608	1.0457	1.0000	5.0000
52	Q 12	282	3.6135	.8946	1.0000	5.0000
53	Q 13	299	3.7960	.9564	1.0000	5.0000
54	Q 14a	259	3.6409	.9953	1.0000	5.0000
55	Q 14b	270	3.7852	1.0158	1.0000	5.0000
56	Q 14c	156	3.8526	.9558	1.0000	5.0000
57	Q 15	280	3.7786	1.0748	1.0000	5.0000
58	Q 16	295	3.8136	.8936	1.0000	5.0000
59	C 1	313	.4824	.5005	.0000	1.0000
60	C 2	315	.2222	.4164	.0000	1.0000

## ----- DESCRIPTIVE STATISTICS -----

HEADER DATA FOR: B:OB-GYNF      LABEL: OB-GYN FOLLOW-UP SURVEYS (AFTER CHANGE)  
 NUMBER OF CASES: 121      NUMBER OF VARIABLES: 61

## OB-GYN OUTPATIENT SATISFACTION POST-SURVEY (AFTER CHANGE)

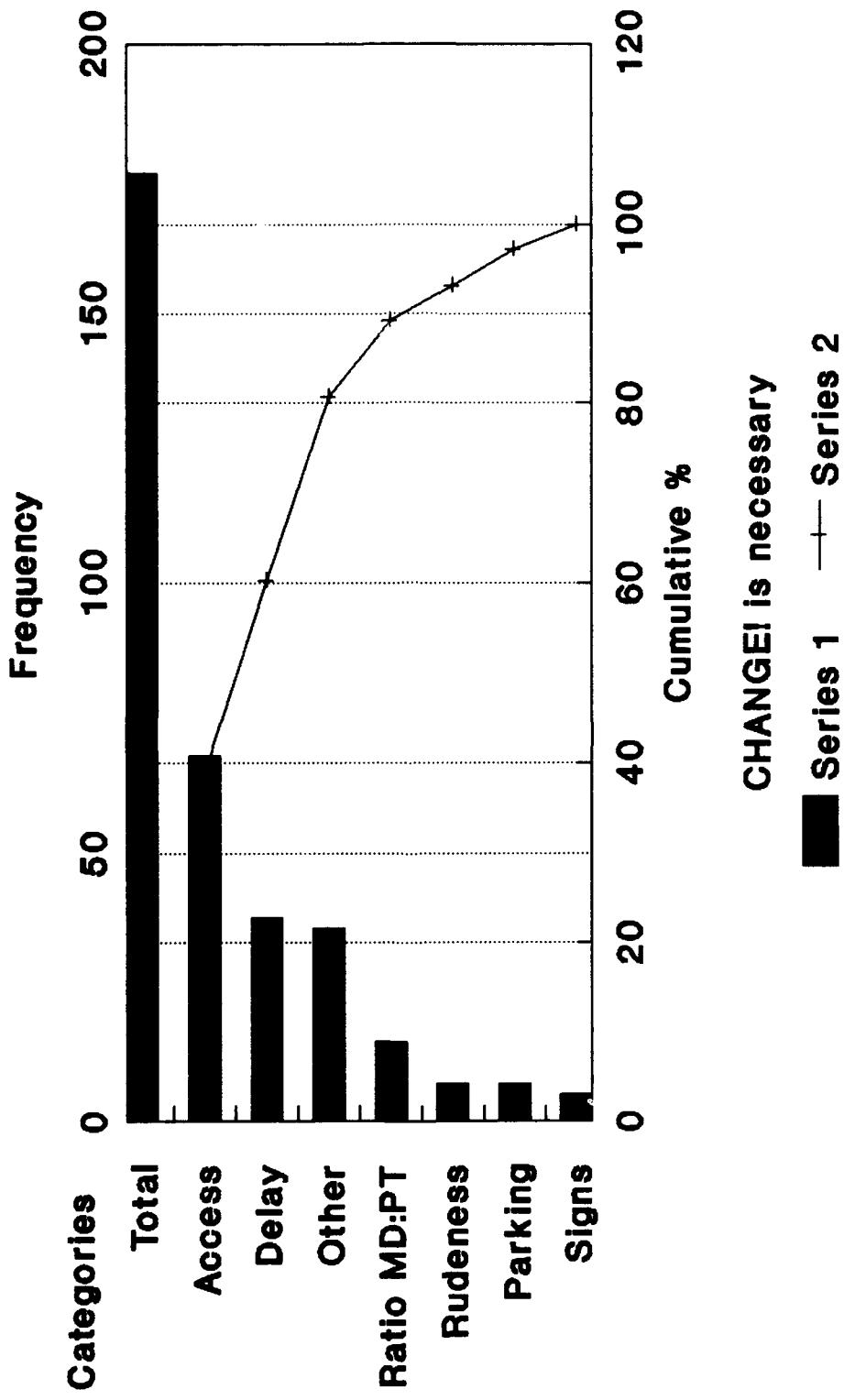
NO.	NAME	N	MEAN	STD. DEV.	MINIMUM	MAXIMUM
1	DATE	119	521.4118	3.7965	515.0000	528.0000
2	APPOINT	116	.8966	.3059	.0000	1.0000
3	WALK-IN	116	.0690	.2545	.0000	1.0000
4	OB	116	.4569	.5003	.0000	1.0000
5	GYN	116	.5431	.5003	.0000	1.0000
6	1ST APPT	119	.1933	.3965	.0000	1.0000
7	<5 APPT	119	.3782	.4870	.0000	1.0000
8	6-10 APP	119	.2773	.4496	.0000	1.0000
9	10-20 AP	119	.1092	.3133	.0000	1.0000
10	MORE	119	.0420	.2015	.0000	1.0000
11	PERIOD	78	.9732	1.4877	.0000	10.0000
12	ACTIVE D	120	.3833	.4882	.0000	1.0000
13	ACT FM	120	.5417	.5004	.0000	1.0000
14	RETIREE	120	.0000	.0000	.0000	.0000
15	RET FM	120	.0167	.1286	.0000	1.0000
16	CIV EMP	120	.0583	.2354	.0000	1.0000
17	CIV EMER	120	.0000	.0000	.0000	.0000
18	AGE	118	28.4661	6.9684	17.0000	50.0000
19	WHITE	116	.5345	.5010	.0000	1.0000
20	BLACK	116	.3448	.4774	.0000	1.0000
21	HISPANIC	116	.1034	.3059	.0000	1.0000
22	ASIAN	116	.0000	.0000	.0000	.0000
23	OTHER	116	.0172	.1307	.0000	1.0000
24	SINGLE	121	.1240	.3309	.0000	1.0000
25	SEPARATE	121	.0083	.0909	.0000	1.0000
26	WIDOWED	121	.0000	.0000	.0000	.0000
27	MARRIED	121	.8264	.3803	.0000	1.0000
28	DIVORCED	121	.0413	.1999	.0000	1.0000
29	CHILDREN	121	.6116	.4894	.0000	1.0000
30	# OF CHI	120	1.1083	1.1137	.0000	4.0000
31	QTRS	118	.7542	.4324	.0000	1.0000
32	ECONOMY	118	.2458	.4324	.0000	1.0000
33	1-10	119	.4706	.5012	.0000	1.0000
34	11-20	119	.2269	.4206	.0000	1.0000
35	21-30	119	.1261	.3333	.0000	1.0000
36	31-40	119	.1261	.3333	.0000	1.0000
37	>40	119	.0504	.2197	.0000	1.0000
38	Q1	116	3.5690	.9158	2.0000	5.0000
39	Q2	118	3.3814	1.1317	1.0000	5.0000
40	Q3 ACCES	120	3.0750	1.2910	1.0000	5.0000
41	Q4a	118	3.9153	.9112	2.0000	5.0000
42	Q4b	105	3.6857	1.0770	1.0000	5.0000
43	Q5	115	3.9130	.9784	1.0000	5.0000
44	Q6	113	4.0885	.8189	2.0000	5.0000
45	Q6a	115	4.0087	.8532	2.0000	5.0000
46	Q6b	105	3.9905	.9557	1.0000	5.0000
47	Q7	94	3.7234	1.1677	1.0000	5.0000
48	Q8 DELAY	117	3.1966	1.1160	1.0000	5.0000
49	Q9	111	3.8108	1.0226	1.0000	5.0000
50	Q10	97	3.5670	1.1448	1.0000	5.0000
51	Q11	116	3.2845	1.1482	1.0000	5.0000
52	Q12	111	3.6667	.9471	2.0000	5.0000
53	Q13	115	3.7739	.9648	1.0000	5.0000
54	Q14a	89	3.6517	.9547	1.0000	5.0000
55	Q14b	105	4.0095	1.0237	1.0000	5.0000
56	Q14c	49	4.0000	1.0992	1.0000	5.0000
57	Q15	102	3.8627	1.1522	1.0000	5.0000
58	Q16	119	3.8908	.9637	1.0000	5.0000
59	Q1	121	.3802	.4874	.0000	1.0000
60	Q2	121	.1983	.4004	.0000	1.0000

**Appendix G**

**Pareto Chart Comments (Before)**

# OB-GYN OUTPATIENT SATISFACTION SURVEY

## Negative Comments

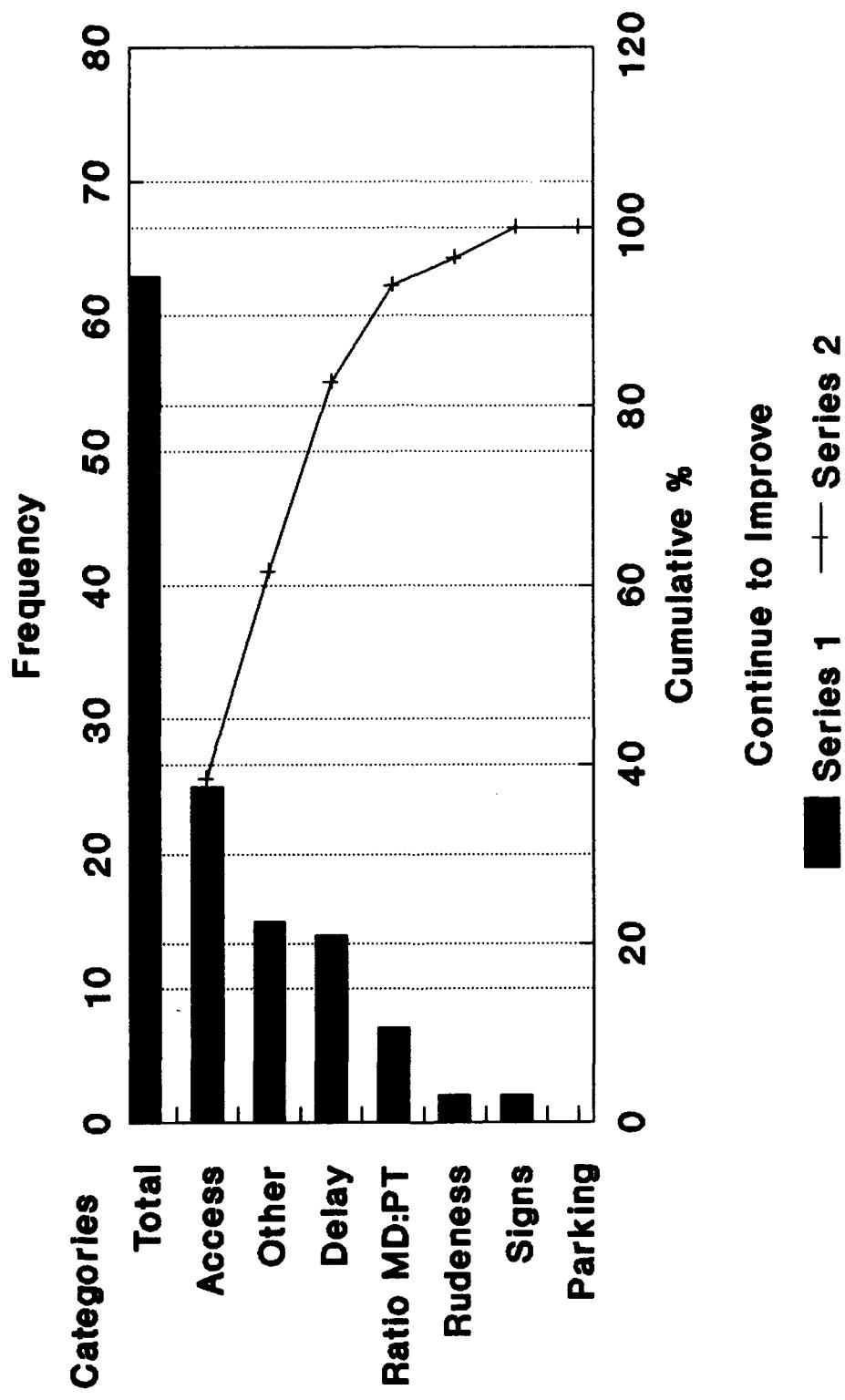


**Appendix H**

**Pareto Comments After Change**

# OB-GYN OUTPATIENT SATISFACTION SURVEY

## Negative Comments



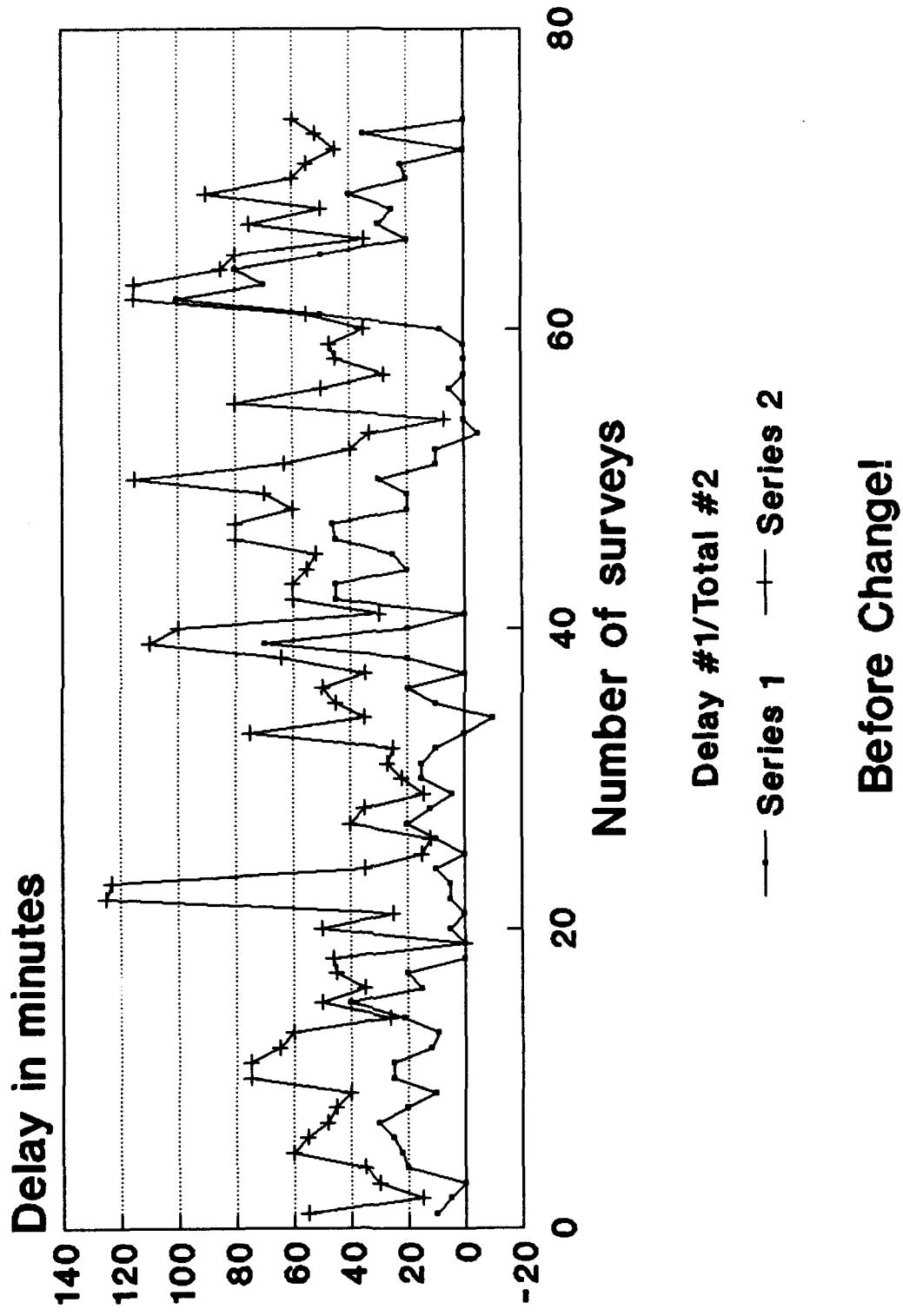
After Change

**Appendix I**

**Time Log Results and Time Log**

# OB-GYN Clinic Time Log

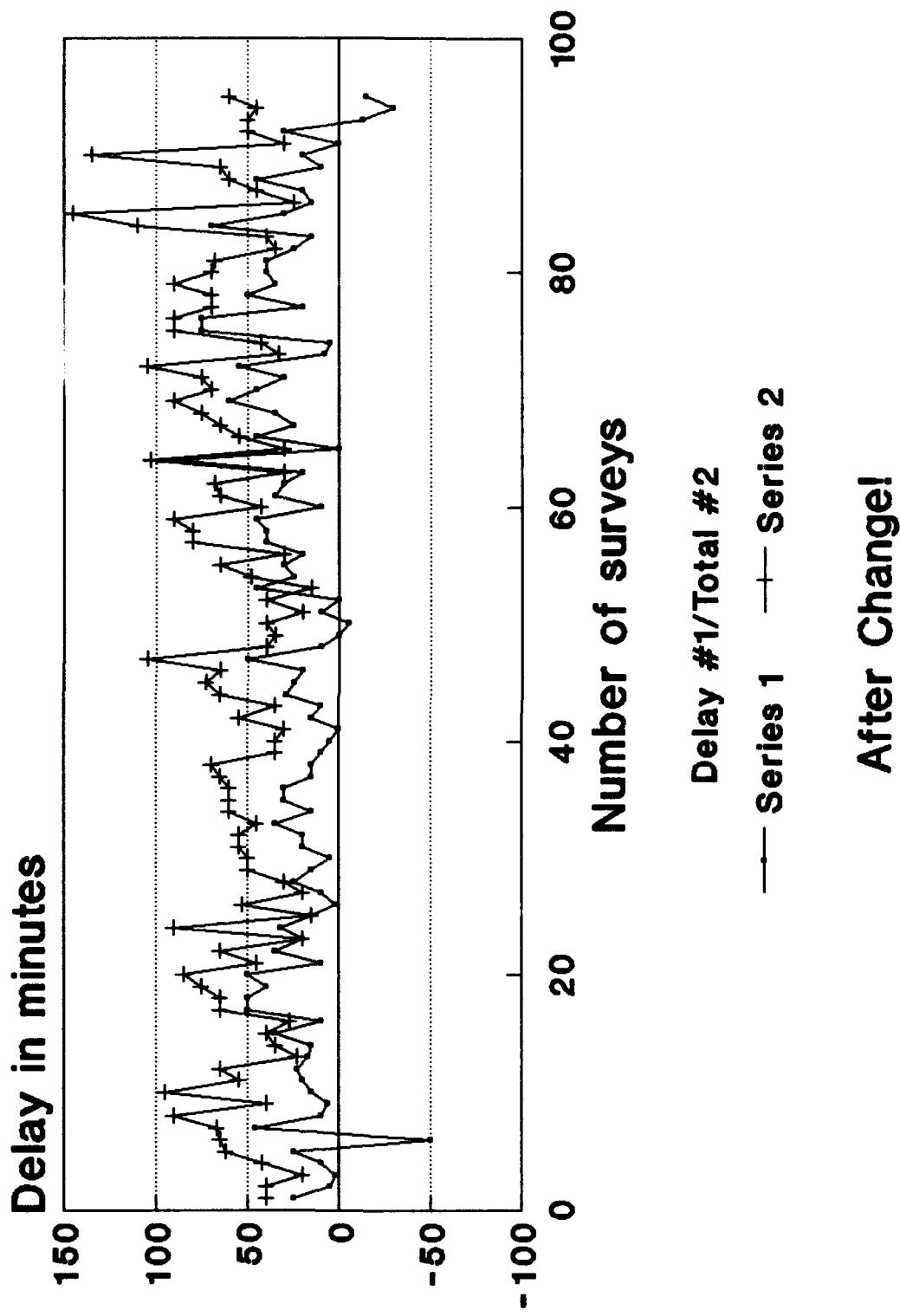
## Delay in seeing Provider



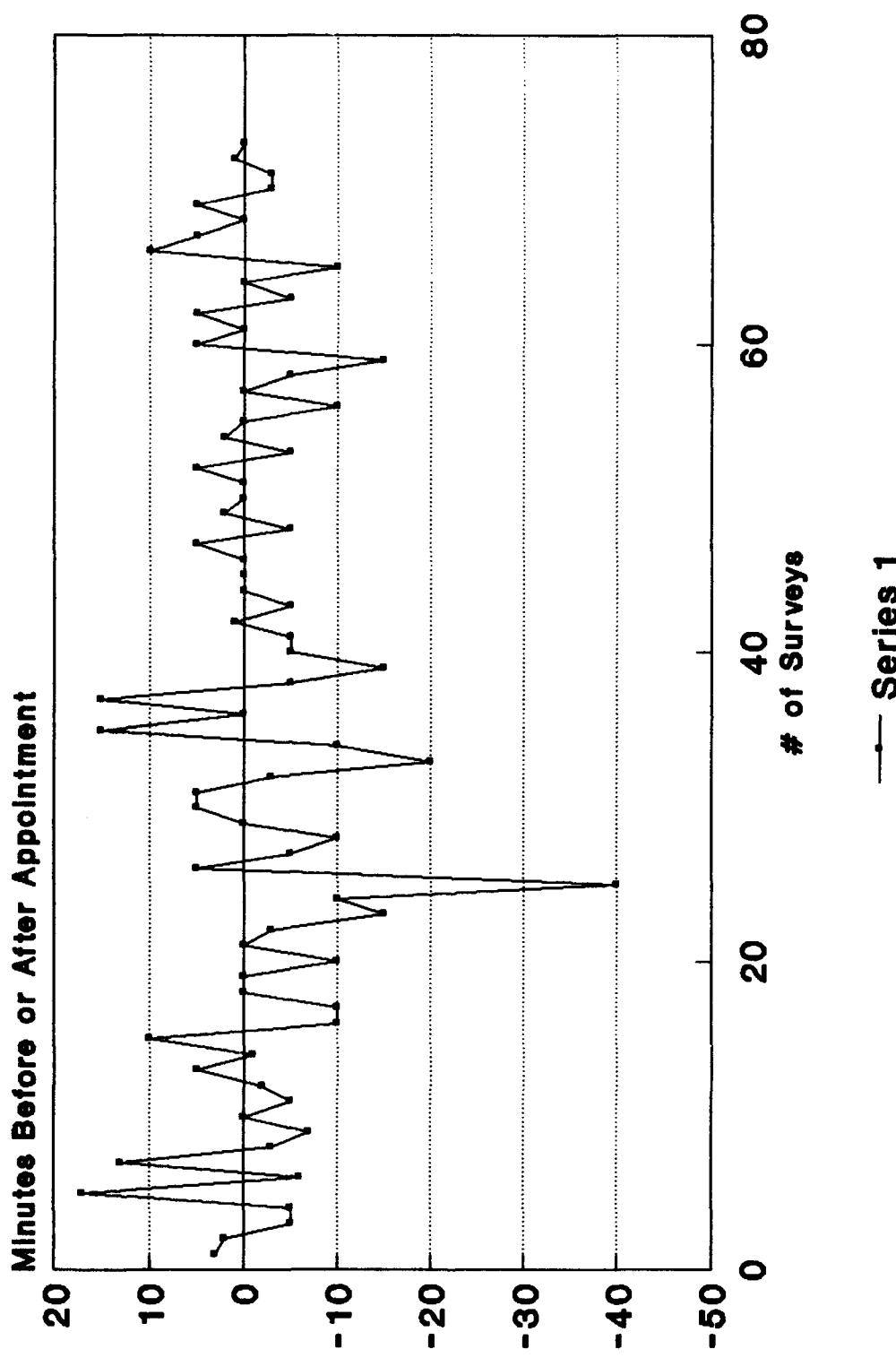
Before Change!

# OB-GYN Clinic Time Log (2)

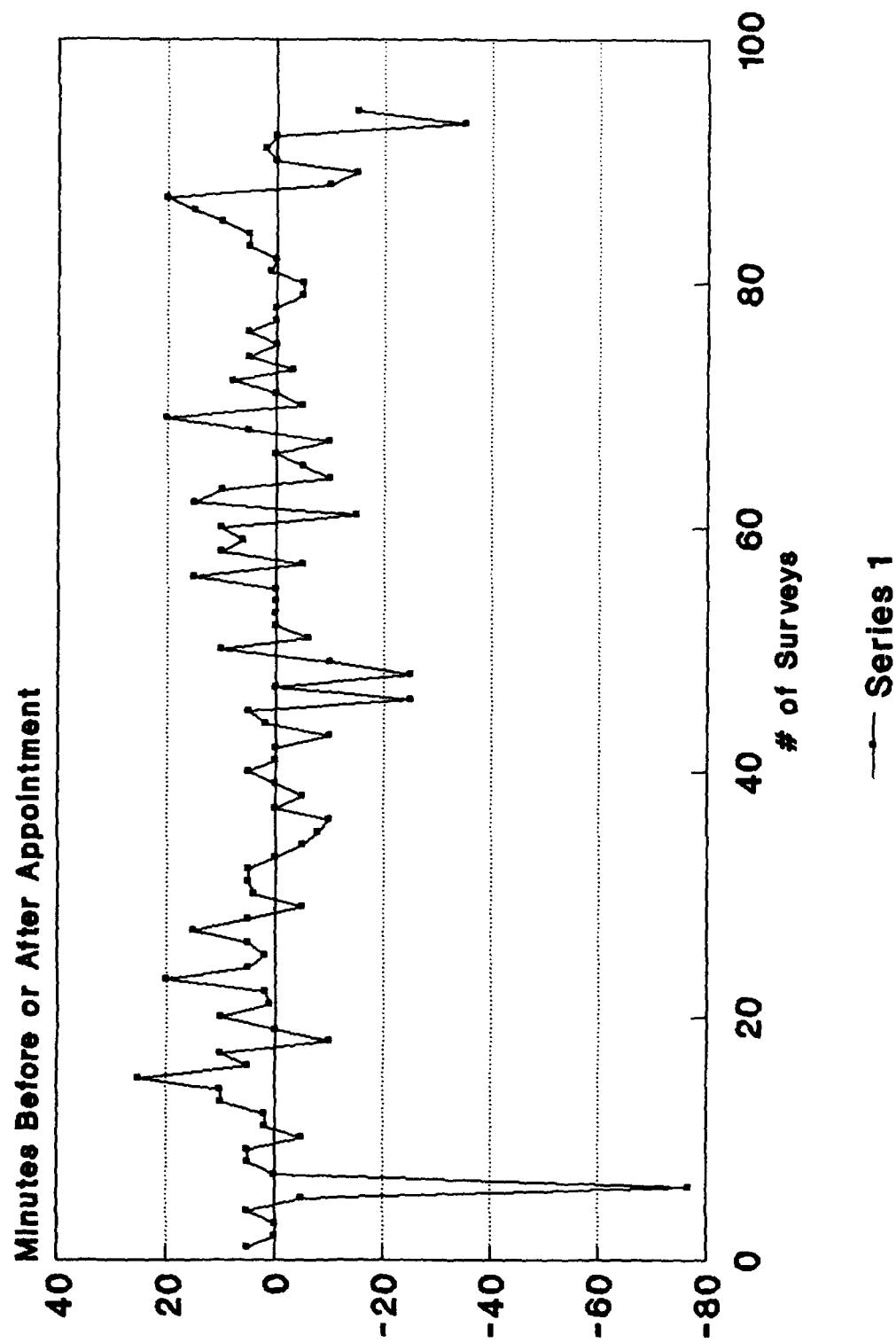
## Delay in seeing Provider



## Screening Room Delay (Before Change)



## Screening Room Delay (After Change)



# OB-GYN Clinic Time Log

- Time you arrived at the Clinic? -----
- Time you were called or signed-in by the receptionist? -----
- Your scheduled appointment time? ----- or the time you signed-in for walk-in/sick call? -----
- Time you were seen in the screening room or by the triage nurse? -----
- Time you were seen by the doctor or midwife? -----
- Time you were given your lab slips? -----
- Time you departed the Clinic? -----



**THANK-YOU!**

Appendix J:

**OB-GYN Brainstorm Results**

**GYN PROBLEMS:**

No appointments available

Outlying clinics not doing PAPs

Patients arrive without consult

**SOLUTION SUGGESTION:**

CHAMPUS Policy

Do Frankfurt PAPs  
only

Refer patient to  
AHC or Emergency  
Room (Policy?)

Education

**Discussion:**

**Problems and Recommendations:**

**1. Non-availability of appointments:**

Currently the biggest problem appointment type is GYN (either a new GYN or a follow up & post-op appointment). There are not enough GYN appointments to go around. When we lose four MDs in May, the shortage will worsen.

**suggestion:**

We will need to begin CHAMPUSing patients (family members & pay patients) as we currently do with infertility patients. Active Duty Soldiers have priority on GYN appointments now and cannot be CHAMPUSED out. We would suggest continuing to see all of the patients currently being followed for a specific GYN problem, but accept no new ones. Dr. Schneider can only see family members. Perhaps she can follow-up on those who currently are in the system and have Drs Christian and Sison see active duty. Or decide which GYN procedures, in addition to infertility, could be CHAMPUSED out and CHAMPUS out those procedures only.

**2. Post-op patients need their follow ups.** Currently some doctors have patients either come in when they have walk-in clinics or make time for post-op appointments when they are on L&D rotation. Unless more GYN appointments are created, I think having them in when the doctor has walk-in clinics is the best or have them come in as an overbook on the Doctor's GYN day. Of course the booking clerk will still try and book these patients

before the GYN schedule goes out so the overbook system will not need to be used.

3. Patient Waiting Times: Currently patients are either waiting for walk-in/sick call or for a scheduled appointment.

**Booking (GYN) Problems:**

Cancellation (short notice) list  
-Medicolegal issue? Not, re. Ms E.

Education  
non-issue

**Discussion:**

**GYN Patient arrives at Clinic Problems:**

No record (6 pts/day)  
- Defensive Medicine

Education  
Turn away patient  
See Patient-Chastise

No white card

PAD/LAB confusion  
-will lab accept handwritten?  
-will PAD make?

Patient Late

Solutions out of scope

Status Quo?

**Discussion:**

Screening Room Bottleneck Problems:

Patients backed-up due to numerous responsibilities of screener (i.e., PAP paperwork, Lab paperwork [coming and going], urine dipstick, vital signs etc.).

Redistribute duties to TRIAGE and 71G

Change room assignments (COL Sison?)

Discussion:

GYN Health Care Provider (HCP) Problems:

Treatment room restocking

Job book that covers standard stock list and assignment changes etc.

Each provider makes restocking list

Major restock every Thursday (MIL) and Friday (CIV)

Minor restock for whoever has clinic scheduled (minor)

Provider want list (daily)

Lab results not available

Job Book for staff and instruction sheet for providers

71G always available

Patient check with 71G for labs when

picking up record  
prior to seeing  
provider

Provide 71G print  
out of next days  
appointment  
schedule

Chaperons not available

Male chaperons for  
Female providers

Schedule reflects  
staff (Chap)  
availability,  
e.g., limited  
clinics, OB days,  
GYN days etc.

NSTs done on,  
newly formed and  
staffed,  
Antepartum  
Diagnostic Center  
(Outpatient)  
attached to L&D

CHAMPUS all  
Dysplasia

Secretary does  
Dysplasia

administration

Slow HCP

Beyond scope of  
PAT

HCP Late for Clinic/Walk-in

Schedule  
agreement  
between  
providers and  
staff, e.g.,  
1300 or 1330  
(Policy)

Educate everyone

Emphasis by Dr.  
Sison that

providers not  
neglect for  
personal  
reasons  
(Enforcement  
Policy)

Overbooks

Decrease demand by  
CHAMPUSing

Develop Policy all  
providers will  
abide by

Reflect true  
number seen in  
schedule, 6  
extra/provider,  
120/month

Appointment Access

CHAMPUS

Discussion:

1. Problem:

- a. SCHEDULES: HCP schedules are made up without collaboration with the nursing staff. This makes it difficult to coordinate coverage (Maybe the schedule can be done jointly since both have a feel for what areas are needed). We can also coordinate scheduling everyone for TNG, PT Tests, OPDs, etc.
- b. Currently the schedule is made for HCPs for one month at a time. It then is given to the secretary to be screened, then to the physician scheduler for verification and finally to the Head Nurse for implementation. There is no consistency. The staff usually does not get the schedule until it is completed or when the physician scheduler sees problems. Areas to cover include: L&D, WI, ROB, COB, FOL, DYS, GYN, NOB and 24 hour coverage.
- c. Schedules are sometimes half days. This makes it difficult to keep nursing staff to cover all areas.

2. Problem: Trying to get chaperons if more than one male Dr. is seeing GYN or PAPs. Recommend: designating specific days for each type of patient. All day (not half) for 1 HCP.

3. Scheduled appointments - patients are currently waiting for either a late doctor or a doctor running late because points are out of sequence. i.e. patient running late or more than 15 minutes late which throws the next patient off and so on.

---Recommendation, if a Dr. is running late, either, re-route patient to the walk-in doctor if they are willing to take them, or if OB patient, see if a nurse midwife is available to see some or offer the patient the option to reschedule the appointment. If the patient is running late, it should be up to the doctor seeing appointments as to whether the patient could be seen without throwing the system off and getting another patient out of sequence. Or a patient late policy should be developed or the patient should be asked to rescheduled.

**GYN Follow-up Lab paperwork Processing:**

Inconsistent

Move duty to 71G

**Discussion:**

**GYN Front Desk problems:**

GYN Appointments not available

CHAMPUS Policy

Congestion (long lines of patients)

Dysplasia and Walk-in do their own check-in and inprocessing

Incoming phone calls to providers

Two MDs in Walk-in one a floating consultant, Rx signer, etc.

Standard policy on patient questions and follow-up

FMEDDAC OB-GYN  
110

RN screen

InterCom system

Patients medical questions

See above

Discussion:

1. Patient Waiting Time and Records: we think it would benefit the patient who has an appointment (to be checked in more efficiently) if we could concentrate on those patients. Having the patients record pulled, SF 600 stamped and all ready to go when they come in, cuts down on a lot of time for them.

A records room would be handy to maintain all records of our OB patients, especially when the patients come in on sick call. They would be directed to records room to pick up their file. Also, the lab slips would be located in this room for filing into their records. We can refer them to the records room if the patient handcarries her records.

Possible PAT Recommendation:

We are getting a 71G - will locate up front (Head Nurse's office).

Patients and appointments go to records: pick up record, get paperwork stamped, given CHAMPUS and pap & slide. Go to waiting room to be called.

After seen, returns record to records room, may get lab paperwork and goes to front and makes own appointment.

Advantage: frees front desk to handle patient flow and appointments. Paperwork would be completed in the records room prior to going to screening room. May provide paperwork sample in waiting room on how to fill CHAMPUS forms. Clinic subject matter expert on CHAMPUS.

Problem: Must have records clerk there at all times.

2. Recommendation for triage - get one patient ready for HCP in the exam room. Goes to next exam, screens patient - if not urgent has patient wait in waiting room, then calls next patient.

OB PROBLEMS:

SOLUTION SUGGESTION:

Same as GYN

Overbooks

Decrease demand by  
CHAMPUSing

Develop Policy all  
providers will  
abide by

Reflect true  
number seen in  
schedule, 6  
extra/provider,  
120/month (ROB  
and COB

PAP problems

Outlying clinics  
should do their  
own PAPs

Discussion:

We should continue using the computer system as much as possible and doing as few appointments on paper as possible. This would alleviate any papers getting lost or misplaced or someone forgetting to erase or fill in an appointment. We think patients who are ROB and COB should have their last four appointments booked at the same time when they visit us at 36 weeks to be sure we track them efficiently and to keep from overbooking them.

Recommendations:

- a. All patients make own follow up appointments. We can have separate books up front.
- b. One book has ROB (COB) patients with computerized templates for each doctor and times available.
- c. Four separate Tabs: To be seen one week, two week, three weeks, four weeks. Booking clerk adds a page a week (WED) may have separate blocks for active duty only.
- d. The Booking clerk enters new appointments in computer at the end of day - places a dot on side of name that is entered. If a call comes in - clerk can get information from the book on available times, enters information into computer and only needs the

name in the book, places dot on side.

- e. Pap appointments: same way one for routine, one for follow up.
- f. Six week follow up appointments---from postpartum (PP), can be designated one to two days for each month to be Post-Partum patients only. Can give this to patients to make schedules, patients will not know if a specific Dr. sees them - maybe the local national Dr. or the CHAMPUS physician. I believe they get PAPs too.

WALK-IN PROBLEMS:

Same as GYN

Consults (no notice from out-clinics)

SOLUTION SUGGESTION:

Two MD concept (see GYN)

Rx refills

Ditto

Afternoon OBs

Ditto

No cut-off time

Ditto

No safety valve for overload or policy

Ditto

Discussion:

As far as walk-in/sick call is concerned, there is really no way to gauge the time when a patient is waiting for sick call treatment, but we can change our sick call hours for Active Duty to 8-930 and for family members 930-1100. Our sick call/walk-in doctor usually does not begin seeing patients until 0800, so the patient who was here at 0730 usually has waited a half an hour before being seen, OR have the sick call Dr be ready to see the first patient at 0730.

DYSPLASIA PROBLEMS:

Appointment Availability

SOLUTION SUGGESTION:

CHAMPUS out

Discussion:

**CURRENT RESPONSIBILITIES**

**1. Patient needs an OB or GYN appointment:**

a. 1st visit---how were they identified, by consult or with positive HCG?

b. Referred by primary care source (Consult)?

**2. Patients must either call on the telephone or come into the clinic:**

b. New appointments are released on Wednesdays:

- 1) Active Duty have priority from 0730-1330.
- 2) At 1330 in the afternoon appointments are release to all categories.
- 3) On Friday all unbooked active duty appointments are released to all categories.

3. All appointments are maintained in AQCESS. However, Dysplasia and Walk-in appointments are batched into the computer after they are recorded in a manual log.

**4. Front Desk procedures:**

a. Patients desiring appointments, bookings or information are directed to the left side of the counter to receive assistance. Patients with appointments or walk-ins are processed on right side of the counter.

b. Patients with appointments are called 15 minutes prior to their appointment time (Sign in lobby instructs them to wait to be called). When called:

1) Patients with appointments for pap smears (FOL) see the CHAMPUS physician and must complete a yellow CHAMPUS form. The pap smear paperwork and SF 600 are stamped with: date, OB-Gyn stamp, and time of appointment. The patient then goes to the screening room to pick-up pap smear slide, to receive a history and assessment (imp, etc. ?), vital signs (BP-WT-HT). Then the patient waits to see the health care provider.

2) Patients with appointments for routine OB (ROB) or complicated OB (COB): receive their chart from the front desk receptionist (If they are from Frankfurt - the chart is already stamped). We give them their chart. They are directed to the bathroom collect a urine specimen (we are implementing process in which patients dip their own urine and then take the dipstick to

screening to be read). The patient then walks across the hall to the screening room to get their vital signs (BP, WT, protein and glucose check). Then they wait to see the health care provider. ROB appointments are scheduled every 10 minutes. COB appointments are scheduled every 20 minutes.

3) Patients with GYN (CBN or CBF) appointments get a SF 600 stamped, fill out pap smear paperwork (If they have not had one within a year), and fill-out a CHAMPUS form if seeing a CHAMPUS provider. From there they go to screening for vital signs (BP, WT, HT etc.). Then they wait to see the health care provider.

4) Patients with Dysplasia appointments get a SF 600 stamped. Next they go to the Dysplasia clinic to receive their vital signs and to see the health care provider for their appointment.

5) Walk-in/Sick call is for OB patients only: they sign-in and pick-up their chart at the front desk. They place the chart in the box in hallway and wait to be triaged. Once triaged patients are sent to the screening room to collect a urine sample and have their vital signs taken. Then the patient waits to see the health care provider. Sick call for active duty patients begins at 0730 and continues till 0900. At 0900 family member OB patients are allowed to sign-in for sick call. These patients continue to be seen until 1100. The Walk-in /Sick call physician continues seeing patients from 1300-1630 (usually stop at 1500). In addition, to the hold over OB sick call patients, he/she also sees consult and referral GYN patients. Some OB patients from outlying clinics and within the hospital are also seen.

6) Birth control refill requests are accepted from 1000-1100 Monday - Friday. The patient fills out a form and the Walk-in physician makes out the prescription.

##### 5. TYPES OF INFORMATION AT FRONT DESK:

a. Pregnancy test: patients are given a specimen cup, paperwork information (lab slip?) and given control number to call in for results.

b. ETOPs pregnancies or abortions: patients get pregnancy tests if one has not already been done. Then the patients goes to walk-in to get vital signs for sizing of uterus (fetus), we give information on ETOPs (abortions) during triage.

c. Patients requesting flight statements, EDC statements, profiles, or CHAMPUS referrals, etc. are routed to the Head

Nurse, NCOIC, or the Secretary.

d. Prenatal classes are given by the nurse midwives. They also give labor and delivery tours once a month. We usually get 30-60 people and they are booked at the front desk.

e. Orientation classes are scheduled on Wednesday, we have a separate appointment book for this. The Head Nurse will be giving these classes the beginning of April (may want to change procedure on appointment system).

f. Other front desk duties include: filing lab slips (This may become the 71Gs responsibility).

6. Other duties required after patients sees the health care provider include: preparing lab slips (this is accomplished by screening room personnel---includes patient picking-up paperwork and getting lab slips stamped appropriately) and administering one hour glucose drink / tests (This causes back-up of patients to be screened). After the patient picks up lab slips (if needed) she goes to front desk and returns chart. If the patient is from Frankfurt she checks booking for a follow-up appointment (usually PAPs, ROB, COB, Dysplasia).